

**Please Note: These minutes are pending Board approval.
Board of Education
Newtown, Connecticut**

Minutes of the Board of Education meeting held on April 19, 2022 at 7:00 p.m. in the Council Chambers, 3 Primrose Street.

D. Zukowski, Chair	L. Rodrigue
J. Vouros, Vice Chair (virtually)	A. Uberti
D. Ramsey, Secretary	T. Vadas
R. Harriman (absent)	5 Staff
D. Cruson	13 Public
J. Kuzma	1 Press
J. Larkin	
C. Savo	
M. Irvine	

Ms. Zukowski called the meeting to order at 7:01 p.m.
Mr. Vouros joined the meeting virtually.

Item 1 – Pledge of Allegiance

Item 2 – Consent Agenda

MOTION: Mr. Cruson moved that the Board of Education approve the consent agenda which includes the donation to Newtown High School and the correspondence report. Mr. Ramsey seconded. Motion passes unanimously.

Item 3 – Public Participation

Ryan Knapp, 11 Jeremiah Road, Newtown, spoke about the minutes from April 5, 2022. He gave praise to the Board for the detailed minutes but expressed his frustration with a letter that was sent to the Newtown Bee. The BOE minutes outline the Board's intention to split the two policies and he feels that the local paper should set the record straight.

David Stott, 3 River Run Road, Newtown, commented about the minutes from April 5, 2022 and offered his words of encouragement about next school year's budget. It is important to fulfill the needs of the school and was proud to hear the Superintendent outline the needs in the budget. He felt compelled to offer words of appreciation. BOE displayed extreme professionalism.

Item 4 – Reports

Chair Report:

Ms. Zukowski said that the budget plan was approved by the Legislative Council with a reduction of \$300,000. It is now in the hands of the Newtown voters. The vote is on Tuesday, April 26th. Also, on April 11th, the BOF recommended a special appropriation of \$781,000 for the NHS stadium turf practice field. The Legislative Council will be considering the appropriation on Wednesday, April 20th. Finally, if all goes well the Charter Revision Commission will be finishing up on Wednesday.

Superintendent Report:

Dr. Rodrigue welcomed everyone back from Spring Break which now marks the last quarter of the year. It also marks our ability to celebrate and recognize the wonderful staff and students in Newtown. The recognition we will have at future board meetings will include the top 5%, our Valedictorian, our Salutatorian, CAFE award winners, and Profiles in Professionalism. One of the last meetings for PEAC is coming up and in that meeting we will be creating a recap of the

year and presenting to the Board at a future meeting. Finally, our last PD day is on April 29th and schools will be closed for students.

Committee Reports:

Mr. Cruson said that the Superintendent Search Committee and the public received the finalized search results. They received twenty-two applicants. The Board should have received an email to review the applicants.

Mrs. Kuzma expressed her thanks to the community that gave their input. Mr. Collins said he normally does not receive as much input as he did from Newtown. The total was 566 entries

Mrs. Larkin reported on the CFF Subcommittee. They are reviewing food service vendors and will be receiving bids on Wednesday, April 20th. Mrs. Vadas is planning on meeting with the bus vendor, All Star, to discuss the upcoming bus contract. Finally, Facilities was able to repair the floor in the High School over spring break.

Students:

Ms. Savo reported that it is the third week of Autism Awareness Month. Students are selling candy, gum and snacks to raise money for Autism brain research.

Mr. Irving reported that the NHS Composers Concert will be on Wednesday, April 20th at 7 pm and Newtown's Night of Jazz will be on May 5th at 7:00 pm. He also said that the High School students are getting ready for AP testing.

Financial report:

MOTION: Mr. Cruson moved that the Board of Education approve the financial report for the month ending March 31, 2022. Mr. Ramsey seconded.

Mrs. Vadas presented an overview of the report.

Motion passes unanimously.

Item 5 – Presentations

African American/Black and Puerto Rican/Latino Course of Studies:

Department Chair, Amy Deeb, and NHS Principal, Dr. Longobucco, presented this curriculum.

Mr. Cruson asked if this course was a full year.

Ms. Deeb said that it is and it was decided on a state level.

Mr. Ramsey thanked Ms. Deeb for her presentation and asked if she could address the biases in the community section.

Ms. Deeb said that the curriculum is over 300 pages and will have to find that section and give you the information at a later time. The full curriculum can be found online.

Mrs. Uberti reminded the Board that Ms. Deeb will not be teaching the course and the teacher that will be teaching this course will be receiving extensive training.

Ms. Deeb said that 150 people that contributed to writing this curriculum are listed on the website.

Ms. Zukowski asked if this course would have a lot of cross over.

Ms. Deeb said that there naturally would be. The American History course is being re-written now and going through the final steps but she expects a lot of cross over.

Ms. Zukowski said it sounds like a very interesting course and would love an update next year.

SPED Co-Teaching:

Dr. Rodrigue introduced Deborah Mailloux- Peterson, Paula Correia-Grayson, and Maureen Hall who will be giving an overview of SPED Co-Teaching. Co-Teaching is not new to Newtown but thought it was good practice to bring back to NHS and now NMS.

Dr. Grayson said that she has been at NHS for the past 6 years. One thing that she found is there is no difference between the two teachers. If you observe, you cannot tell which teacher is the General Ed teacher and which teacher is the SPED teacher. Both teachers have their planning time to modify content based on student's needs. There are 36 co-taught classes in NHS this year.

Mrs. Mailloux-Petersen said that her department, along with Dr. Longobucco, looked at why there was a drastic increase of the number of co-taught classes. It was decided to bring co-teaching to NMS to see if it helps transition students and better prepare them.

Mrs. Hall thanked the Board for the support last year by adding a SPED teacher at the Middle School. It made an impact. Previously, the SPED teachers covered two clusters so they had to interact with 8 core teachers and up to 20 students in their caseload. Now, they can focus on 5 core teachers with smaller caseloads. The middle school has a cluster model. There are 5 co-taught classes in 7th grade and 5 co-taught in 8th grade. There has been great feedback from students and teachers.

Mrs. Kuzma asked if they find students are happy to not be pulled out of class.

Mrs. Hall said that the middle school students are very aware that they are being pulled out and do not want to be different. It is the goal to have students be in the least restrictive environment and have access to the general education instruction but at times students need a little more so co-teaching is a great opportunity for them.

Mrs. Larkin asked Dr. Rodrigue if local towns around Newtown offer this.

Dr. Rodrigue does not know how many.

Mrs. Larkin asked if a special education student was in each co-taught classroom.

Dr. Grayson said that there are classes in every grade level and there has to be a 50/50 ratio of special education and general education students.

Mrs. Larkin asked if the SPED teacher rotated with the students.

Dr. Grayson said that if a student is in 4 co-taught content areas they would have 8 different teachers.

Mr. Ramsey said that it sounds like this restores the joy of teaching and learning. The benefits are more security in instruction and the atmosphere in the classroom can be better. Newtown can be a shining example for other districts.

Dr. Grayson invited the Board to visit the high school to observe a co-taught class.

Mr. Vouros said that he went to an 8th grade middle school co-taught class and the comfort level of the students and teachers was phenomenal.

Ms. Zukowski agreed with Mr. Vouros and said all the children were engaged.

Ms. Zukowski asked if there is a wide range of ability of learners in a classroom and if it is difficult for the teachers to cater to everyone in the classroom.

Mrs. Hall said that the classes are heterogeneous and the teachers are used to teaching to a wide range of learners. The co-taught model isn't any different.

Ms. Zukowski asked how you measure success.

Mrs. Hall said that one measurement is she is looking at overall grades in the middle school.

Item 6 – Old Business

MOTION: Mr. Cruson moved that the Board of Education approve the Integrated STEM Grade 5 Curriculum. Mrs. Kuzma seconded. Motion passes unanimously.

MOTION: Mr. Cruson moved that the Board of Education approve the Integrated STEM Grade 6 Curriculum. Mrs. Kuzma seconded.

Mr. Ramsey wants the record to show that he supports this curriculum. The stem program is very impressive and a great addition.

Motion passes unanimously.

Item 7 – New Business

Hawley Update:

Dr. Rodrigue said that the work at Hawley will begin in the summer and continue the majority of 2022-2023 school year. She has been working with Lead Teachers and Assistant Principals to make this move smoothly. The Principals at each building have communicated with their staff through faculty meetings. Teachers will need boxes and other shipping materials. Dr. Rodrigue is requesting 4 early release days for all students. It will be a 2 hour release for all students except middle and high school which will be a 3 hour release. The early release days are helpful because the moving up ceremony is on June 14th and Graduation is on June 15th. After the summer break, teachers will need time to move/unpack and set up their classrooms so Convocation will be moved to the first day of school after the students are dismissed.

MOTION: Mr. Cruson moved that the Board of Education approve the 2021-2022 Non-renewal List. Mr. Ramsey seconded.

Dr. Rodrigue said that these positions were 1 year contracts.

Motion passes unanimously.

MOTION: Mr. Cruson moved that the Board of Education approve the minutes of April 5, 2022. Mr. Ramsey seconded.

Ms. Zukowski would like to clarify that in her Chair report, the total amount of money that was taken from facilities was \$70,000, not \$170,000.

Motion passes unanimously.

Item 8 – Public Participation

Gina Mazzariello, 12 Bridle Path Trail, is a mother of a 7th grader at NMS and Junior at NHS. She offered her thanks and encouragement around the presentation for the new African American/Black and Puerto Rican/Latino Course of Studies course that will be offered next year.

Tony Keating, 7 Oak Ridge Drive, expressed his concerns with Diversity, Equity and Inclusion. He believes and respects that there is a large community of people that support and are invested in DEI being ramped up in communities. However, he also believes there is a much larger community of people that don't. He believes that DEI falls short and delivers the exact opposite of what it says it will.

Nerlande Foote, 12 Bears Hill Road, wanted to clarify that her issue with the Affirmative Action and Plan for Minority Recruitment policies was not because they were separated. She felt it was a watered down version of the two. She thanked the Board and would like to work with them in the future.

Don Lococo, 27 Hi Barlow Road, offered his thanks to the Board and reminded them that everyone that attends the Board meetings have a lot in common. He proceeded to quote US Representative Jahana Hayes regarding support for students and their success.

Linda O'Sullivan, 10 Farmery Lane, opened her comments in drawing attention to the good work that Mr. Johnson is doing and advising the BOE. She also noted that Mr. Johnson is an employee of the Newtown community and was giving his opinion as an employee of BOE with a background in DEI, not giving his opinion as a leader of the BIPOC community. Allies for Change (NAFC) is here to talk with you. The BIPOC community is not represented on the Board at all but they are a part of the community and it is the Board's responsibility to care about the issues.

MOTION: Mr. Cruson moved to adjourn. Mrs. Kuzma seconded. Motion passes unanimously.

Item 9 – Adjournment

The meeting adjourned at 8:59 pm.

Respectfully submitted:

Donald Ramsey
Secretary

April 4, 2022

TO: Dr. Lorrie Rodrigue

FROM: Kim Longobucco

Please accept the donation of a Pontiac Model: 2006 Vibe AWD VIN: 5Y2SM65876Z411785 at a value of \$3,500. The vehicle will be used by Newtown High School Automotive Repair Classes.

Thank you.

Attach.

Mr. Peter DiBetta
6 Lyrical LN
Sandy Hook, CT 06482-1613
Phone: 203.788.8290

▶ **Newtown Board of Education**

3 Primrose ST
Newtown, CT 06470

Dear Board Members:

I would like to donate my car to the Newtown High School Automotive Technology program. I purchased this car used in 2008 from Park Cadillac in New Milford, CT and it has been my only car since. It is the most reliable car I have ever owned. In February I purchased another used car from a friend's family estate and do not need two cars. I would like to see the Vibe go to a good home for a good cause and believe this program meets those criteria.

Make: Pontiac

Model: 2006 Vibe AWD

VIN: 5Y2SM65876Z411785

Value: \$3,500 (KBB, Private Party, Good Condition)

I appreciate your time and consideration of my request and look forward to hearing the board's decision.

Sincerely,

Peter DiBetta

3 Apr 2022

Correspondence Report
04/05/2022 – 04/18/2022

Date	Name	Subject
04/05/2022	Kathy June	Enrollment Report
04/05/2022	Nancy Gabrielle	Math Pathways
04/06/2022	Dan Cruson	Superintendent Search Update
04/06/2022	Lorrie Rodrigue	Congrats to Katie Mauro
04/07/2022	Joanne Morris	BOE CFF/CIP Sub Committee Agenda and Documents
04/08/2022	Randall Collins	Draft – Successful Candidate Profile - Newtown
04/10/2022	Lorrie Rodrigue	Sunday Highlights
04/10/2022	Deborra Zukowski	April 10, 2022 Week in Preview
04/11/2022	Kiley Gottschalk	BOF 4-11-22 Agenda
04/12/2022	David Knight	BIPTrack Therapy data collection and reporting
04/12/2022	Kathy June	BOE Mailing – April 19, 2022
04/12/2022	Kathy June	Budget Summary Detail
04/12/2022	Daniel Cruson	Superintendent Salary Data
04/14/2022	Randall Collins	Final Newtown Profile
04/17/2022	Lorrie Rodrigue	Fwd: CAFE Policy Highlights 4- 15-2022
04/17/2022	Deborra Zukowski	April 17, 2022 Week in Preview
04/18/2022	Newtown Board of Education	Superintendent Search Successful Candidate Profile

**NEWTOWN BOARD OF EDUCATION
MONTHLY FINANCIAL REPORT
MARCH 31, 2022**

SUMMARY

The ninth report of the 2021-22 school year concludes our third quarter and continues to provide year to date expenses, active encumbrances and anticipated obligations. Many of the accounts have been forecasted as a “full budget spend” in order to determine an estimated full year position. These estimates are captured in the “anticipated obligations” column and are subject to change throughout the year.

During the month of March, the Board of Education spent approximately \$5.7M; \$4.0M on salaries and approximately \$1.7M on all other objects.

Seventy-five percent of the excess cost grant has been received and allocated to the appropriate expense accounts. This revenue is included in the month to date expenditures and totals \$1,209,833. At the end of the financial summary, the amount is displayed and broken out by account. The balance of \$323,699 is due to be received sometime in May.

The current year-end projected balance is now showing a positive position of \$300,325. This balance has increased over the prior month projection by \$68,195 with the majority of the driver coming from our salary accounts.

MAJOR MOVERS

➤ **SALARIES**

Once again, the salary balances have increased over the prior month, yielding a projected increase to the year-end balance by \$56,504. The majority of this change has come from the non-certified accounts.

Salaries – Non-Certified

Adjustments were made in our anticipated obligations that resulted in this projected balance increase. The anticipated obligations column captures the projections that occur throughout the year. Many of these projections accounted for filling our paraeducators, behavioral therapists and other non-certified positions. As we close in on year-end, the chances of filling some of the positions becomes less likely; therefore, adjustments to the salary projections are made.

- The technology department has not been successful in filling its network specialist position and we have released approximately \$17,000 to this account.
- In the paraeducator union, we have changed the projection here to adjust for open positions that have not yet been filled. We currently have between 10-12 openings and have made adjustments based on the likely hood of filling these positions before year-end.

- In special education service salaries, we have adjusted the open behavioral therapist positions by approximately \$10,000.

➤ **BENEFITS**

Pension

The projected year-end balance has decreased by approximately \$48,000 over the prior month.

There has been an adjustment to the projected cost in our pension account; specifically the defined contribution plan, also known as our 401(a) plan. This is the only pension plan available for new hires and mandatory for employees in our nurses, custodians and secretary unions. Paraeducators and non-affiliated employees have the option to opt in or out of this plan and are offered a one time enrollment period of 60 days.

This year we have experienced a large amount of turnover in our non-certified unions as well as retirements. When this occurs, we can see a shift in our pensions, driving our defined contribution plan cost upwards.

The costs for the defined contribution plan are in real time, meaning the costs are immediate due to the structure of the plan, whereas the defined benefit plan cost is set and paid for at the beginning of budget season. This cost is based on actuarial projections.

➤ **OTHER PURCHASED SERVICES**

Special Education Out-of-District Tuition.

The special education out-of-district tuition account has proven to be a challenge to accurately project. Predictions for costs associated with out-placed students, special services, testing, etc. has experienced large balance swings from month to month. This does not come as a surprise. As with many districts, our post pandemic recovery efforts have disrupted the normal protocols and procedures which affects many of these cost centers.

Adjustments have been made in our out-of-district tuition projections. Students that were considered “in process” and were to be out-placed this month, may not take place until the beginning of the next school year; therefore, lowering our anticipated spend for the current year.

We also lowered our encumbrances by approximately \$70,000, adjusting for services for our out-placed students. These costs include additional therapeutic services that either did not occur or occurred at a lower rate.

➤ **PURCHASED PROPERTY SERVICES**

These accounts include our building repair and emergency repair cost centers and are typically spent in full each year. However, these accounts are extremely difficult to predict as they include unforeseen repairs that can carry a heavy cost.

The high school underwent such repair this month resulting in a \$23K expenditure.

➤ **Emergency Repairs**

At the High School, there was a damaged water pipe in one of the classrooms located in the lower level of C-wing that adjoined both the boy's and girl's bathroom. A new waste pipe and fittings had to be installed. The cost was \$23,995 and an emergency repair waiver was submitted as the repair had to be done immediately.

Our cumulative YTD costs for building repairs and emergency repairs is \$286,264, of which \$93,883 accounts for emergency repairs that were over \$5,000. There is a remaining balance of \$119,218 and an anticipated spend of \$136,883.

➤ **Revenue**

We received \$4,233 in local tuition income.

All accounts will be closely monitored and any issues that arise will be reported to the Board immediately.

Tanja Vadas
Director of Business & Finance
April 12, 2022

**NEWTOWN BOARD OF EDUCATION
2021-22 BUDGET SUMMARY REPORT
FOR THE MONTH ENDING MARCH 31, 2022**

OBJECT CODE	EXPENSE CATEGORY	CURRENT BUDGET	YTD EXPENDITURE	ENCUMBER	BALANCE	ANTICIPATED OBLIGATIONS	PROJECTED BALANCE	% EXP
<u>GENERAL FUND BUDGET</u>								
100	SALARIES	\$ 52,183,415	\$ 33,469,330	\$ 17,547,564	\$ 1,166,521	\$ 827,120	\$ 339,401	99.35%
200	EMPLOYEE BENEFITS	\$ 11,665,232	\$ 8,824,311	\$ 2,203,490	\$ 637,431	\$ 710,487	\$ (73,056)	100.63%
300	PROFESSIONAL SERVICES	\$ 687,417	\$ 318,413	\$ 51,047	\$ 317,958	\$ 320,767	\$ (2,809)	100.41%
400	PURCHASED PROPERTY SERV.	\$ 1,847,678	\$ 1,167,509	\$ 305,227	\$ 374,942	\$ 402,401	\$ (27,459)	101.49%
500	OTHER PURCHASED SERVICES	\$ 9,429,686	\$ 6,038,737	\$ 2,927,065	\$ 463,884	\$ 511,476	\$ (47,592)	100.50%
600	SUPPLIES	\$ 3,381,039	\$ 2,210,172	\$ 177,838	\$ 993,028	\$ 970,957	\$ 22,071	99.35%
700	PROPERTY	\$ 329,112	\$ 68,086	\$ 148,524	\$ 112,501	\$ 122,732	\$ (10,231)	103.11%
800	MISCELLANEOUS	\$ 74,119	\$ 55,376	\$ 554	\$ 18,189	\$ 18,189	\$ -	100.00%
910	SPECIAL ED CONTINGENCY	\$ 100,000	\$ -	\$ -	\$ 100,000	\$ -	\$ 100,000	0.00%
TOTAL GENERAL FUND BUDGET		\$ 79,697,698	\$ 52,151,934	\$ 23,361,310	\$ 4,184,454	\$ 3,884,129	\$ 300,325	99.62%
TRANSFER NON-LAPSING								
GRAND TOTAL		\$ 79,697,698	\$ 52,151,934	\$ 23,361,310	\$ 4,184,454	\$ 3,884,129	\$ 300,325	99.62%
			\$ (4,493,060)					
100	SALARIES							
	Administrative Salaries	\$ 4,236,559	\$ 3,162,293	\$ 1,067,706	\$ 6,560	\$ 12,798	\$ (6,238)	100.15%
	Teachers & Specialists Salaries	\$ 32,891,949	\$ 20,131,750	\$ 12,542,578	\$ 217,621	\$ 96,331	\$ 121,290	99.63%
	Early Retirement	\$ 81,000	\$ 81,000	\$ -	\$ -	\$ -	\$ -	100.00%
	Continuing Ed./Summer School	\$ 94,233	\$ 82,324	\$ 11,909	\$ -	\$ -	\$ -	100.00%

**NEWTOWN BOARD OF EDUCATION
2021-22 BUDGET SUMMARY REPORT
FOR THE MONTH ENDING MARCH 31, 2022**

OBJECT CODE	EXPENSE CATEGORY	CURRENT BUDGET	YTD EXPENDITURE	ENCUMBER	BALANCE	ANTICIPATED OBLIGATIONS	PROJECTED BALANCE	% EXP
	Homebound & Tutors Salaries	\$ 159,858	\$ 69,685	\$ 21,919	\$ 68,253	\$ 69,019	\$ (765)	100.48%
	Certified Substitutes	\$ 642,310	\$ 438,298	\$ 135,304	\$ 68,707	\$ 142,055	\$ (73,348)	111.42%
	Coaching/Activities	\$ 662,356	\$ 362,163	\$ 1,333	\$ 298,860	\$ 298,860	\$ -	100.00%
	Staff & Program Development	\$ 150,083	\$ 98,124	\$ 102,995	\$ (51,036)	\$ 925	\$ (51,961)	134.62%
	CERTIFIED SALARIES	\$ 38,918,348	\$ 24,425,638	\$ 13,883,745	\$ 608,965	\$ 619,987	\$ (11,022)	100.03%
	Supervisors & Technology Salaries	\$ 1,101,338	\$ 780,348	\$ 221,290	\$ 99,700	\$ 37,526	\$ 62,173	94.35%
	Clerical & Secretarial Salaries	\$ 2,318,762	\$ 1,634,175	\$ 665,703	\$ 18,884	\$ 900	\$ 17,984	99.22%
	Educational Assistants	\$ 2,939,688	\$ 1,880,525	\$ 843,299	\$ 215,864	\$ 43,000	\$ 172,864	94.12%
	Nurses & Medical Advisors	\$ 927,175	\$ 579,174	\$ 346,933	\$ 1,068	\$ 28,000	\$ (26,932)	102.90%
	Custodial & Maint. Salaries	\$ 3,331,418	\$ 2,313,524	\$ 912,740	\$ 105,153	\$ 21,344	\$ 83,810	97.48%
	Non-Certified Adj & Bus Drivers Salaries	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	#DIV/0!
	Career/Job Salaries	\$ 134,711	\$ 90,893	\$ 63,744	\$ (19,926)	\$ (26,339)	\$ 6,413	95.24%
	Special Education Svcs Salaries	\$ 1,449,812	\$ 918,613	\$ 405,901	\$ 125,298	\$ 15,897	\$ 109,401	92.45%
	Security Salaries & Attendance	\$ 676,153	\$ 477,249	\$ 197,514	\$ 1,391	\$ 3,471	\$ (2,081)	100.31%
	Extra Work - Non-Cert.	\$ 118,010	\$ 73,271	\$ 6,696	\$ 38,044	\$ 27,985	\$ 10,059	91.48%
	Custodial & Maint. Overtime	\$ 236,000	\$ 271,207	\$ -	\$ (35,207)	\$ 48,062	\$ (83,269)	135.28%
	Civic Activities/Park & Rec.	\$ 32,000	\$ 24,714	\$ -	\$ 7,286	\$ 7,286	\$ -	100.00%
	NON-CERTIFIED SALARIES	\$ 13,265,067	\$ 9,043,692	\$ 3,663,820	\$ 557,555	\$ 207,133	\$ 350,423	97.36%
	SUBTOTAL SALARIES	\$ 52,183,415	\$ 33,469,330	\$ 17,547,564	\$ 1,166,521	\$ 827,120	\$ 339,401	99.35%
200	EMPLOYEE BENEFITS							
	Medical & Dental Expenses	\$ 8,532,018	\$ 6,430,571	\$ 2,099,325	\$ 2,123	\$ 10,190	\$ (8,067)	100.09%
	Life Insurance	\$ 86,760	\$ 66,360	\$ -	\$ 20,400	\$ 20,400	\$ -	100.00%
	FICA & Medicare	\$ 1,641,519	\$ 1,084,952	\$ -	\$ 556,567	\$ 556,567	\$ -	100.00%
	Pensions	\$ 869,471	\$ 874,633	\$ 500	\$ (5,662)	\$ 60,000	\$ (65,662)	107.55%

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	Unemployment & Employee Assist.	\$ 102,000	\$ 35,083	\$ -	\$ 66,917	\$ 63,330	\$ 3,587	96.48%
	Workers Compensation	\$ 433,464	\$ 332,713	\$ 103,665	\$ (2,914)	\$ -	\$ (2,914)	100.67%
	SUBTOTAL EMPLOYEE BENEFITS	\$ 11,665,232	\$ 8,824,311	\$ 2,203,490	\$ 637,431	\$ 710,487	\$ (73,056)	100.63%
300	PROFESSIONAL SERVICES							
	Professional Services	\$ 518,402	\$ 250,648	\$ 37,150	\$ 230,604	\$ 230,604	\$ -	100.00%
	Professional Educational Serv.	\$ 169,015	\$ 67,765	\$ 13,896	\$ 87,354	\$ 90,163	\$ (2,809)	101.66%
	SUBTOTAL PROFESSIONAL SERV.	\$ 687,417	\$ 318,413	\$ 51,047	\$ 317,958	\$ 320,767	\$ (2,809)	100.41%
400	PURCHASED PROPERTY SERV.							
	Buildings & Grounds Contracted Svc.	\$ 678,563	\$ 509,582	\$ 153,082	\$ 15,899	\$ 20,056	\$ (4,157)	100.61%
	Utility Services - Water & Sewer	\$ 151,157	\$ 73,283	\$ -	\$ 77,874	\$ 77,874	\$ -	100.00%
	Building, Site & Emergency Repairs	\$ 475,000	\$ 286,264	\$ 69,518	\$ 119,218	\$ 136,883	\$ (17,666)	103.72%
	Equipment Repairs	\$ 275,366	\$ 114,306	\$ 40,983	\$ 120,077	\$ 125,713	\$ (5,636)	102.05%
	Rentals - Building & Equipment	\$ 267,592	\$ 184,075	\$ 41,643	\$ 41,874	\$ 41,874	\$ 0	100.00%
	Building & Site Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
	SUBTOTAL PUR. PROPERTY SERV.	\$ 1,847,678	\$ 1,167,509	\$ 305,227	\$ 374,942	\$ 402,401	\$ (27,459)	101.49%
500	OTHER PURCHASED SERVICES							
	Contracted Services	\$ 831,975	\$ 612,982	\$ 187,045	\$ 31,949	\$ 140,496	\$ (108,548)	113.05%
	Transportation Services	\$ 4,461,980	\$ 2,904,131	\$ 1,057,020	\$ 500,829	\$ 425,829	\$ 75,000	98.32%
	Insurance - Property & Liability	\$ 385,500	\$ 306,871	\$ 81,538	\$ (2,909)	\$ 37,000	\$ (39,909)	110.35%
	Communications	\$ 128,815	\$ 143,628	\$ 21,774	\$ (36,587)	\$ (26,261)	\$ (10,327)	108.02%
	Printing Services	\$ 26,169	\$ 6,969	\$ 3,798	\$ 15,403	\$ 18,359	\$ (2,956)	111.30%
	Tuition - Out of District	\$ 3,373,676	\$ 1,932,295	\$ 1,543,526	\$ (102,144)	\$ (141,308)	\$ 39,164	98.84%

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FOR THE MONTH ENDING MARCH 31, 2022**

OBJECT CODE	EXPENSE CATEGORY	CURRENT BUDGET	YTD EXPENDITURE	ENCUMBER	BALANCE	ANTICIPATED OBLIGATIONS	PROJECTED BALANCE	% EXP
	Student Travel & Staff Mileage	\$ 221,571	\$ 131,861	\$ 32,366	\$ 57,344	\$ 57,361	\$ (16)	100.01%
	SUBTOTAL OTHER PURCHASED SERV.	\$ 9,429,686	\$ 6,038,737	\$ 2,927,065	\$ 463,884	\$ 511,476	\$ (47,592)	100.50%
600	SUPPLIES							
	Instructional & Library Supplies	\$ 773,786	\$ 537,338	\$ 87,951	\$ 148,497	\$ 148,497	\$ -	100.00%
	Software, Medical & Office Supplies	\$ 214,816	\$ 118,694	\$ 34,433	\$ 61,689	\$ 62,201	\$ (512)	100.24%
	Plant Supplies	\$ 391,100	\$ 308,890	\$ 35,811	\$ 46,399	\$ 46,816	\$ (417)	100.11%
	Electric	\$ 1,043,970	\$ 703,208	\$ -	\$ 340,762	\$ 329,762	\$ 11,000	98.95%
	Propane & Natural Gas	\$ 416,899	\$ 283,129	\$ -	\$ 133,770	\$ 129,770	\$ 4,000	99.04%
	Fuel Oil	\$ 63,000	\$ 57,989	\$ -	\$ 5,011	\$ 9,011	\$ (4,000)	106.35%
	Fuel for Vehicles & Equip.	\$ 202,401	\$ 128,114	\$ -	\$ 74,287	\$ 62,287	\$ 12,000	94.07%
	Textbooks	\$ 275,067	\$ 72,812	\$ 19,643	\$ 182,612	\$ 182,612	\$ -	100.00%
	SUBTOTAL SUPPLIES	\$ 3,381,039	\$ 2,210,172	\$ 177,838	\$ 993,028	\$ 970,957	\$ 22,071	99.35%
700	PROPERTY							
	Technology Equipment	\$ 130,960	\$ 24,255	\$ 28,710	\$ 77,996	\$ 77,996	\$ -	100.00%
	Other Equipment	\$ 198,152	\$ 43,831	\$ 119,815	\$ 34,506	\$ 44,737	\$ (10,231)	105.16%
	SUBTOTAL PROPERTY	\$ 329,112	\$ 68,086	\$ 148,524	\$ 112,501	\$ 122,732	\$ (10,231)	103.11%
800	MISCELLANEOUS							
	Memberships	\$ 74,119	\$ 55,376	\$ 554	\$ 18,189	\$ 18,189	\$ -	100.00%
	SUBTOTAL MISCELLANEOUS	\$ 74,119	\$ 55,376	\$ 554	\$ 18,189	\$ 18,189	\$ -	100.00%
910	SPECIAL ED CONTINGENCY	\$ 100,000	\$ -	\$ -	\$ 100,000	\$ -	\$ 100,000	0.00%

**NEWTOWN BOARD OF EDUCATION
2021-22 BUDGET SUMMARY REPORT
FOR THE MONTH ENDING MARCH 31, 2022**

OBJECT CODE	EXPENSE CATEGORY	CURRENT BUDGET	YTD EXPENDITURE	ENCUMBER	BALANCE	ANTICIPATED OBLIGATIONS	PROJECTED BALANCE	% EXP
	TOTAL LOCAL BUDGET	\$ 79,697,698	\$ 52,151,934	\$ 23,361,310	\$ 4,184,454	\$ 3,884,129	\$ 300,325	99.62%

<u>SPECIAL REVENUES</u>		STATE PROJ 18-Jan	PROJECTED 1-Mar	ESTIMATED Total	VARIANCE to Budget	FEB DEPOSIT	MAY DEPOSIT	% TO BUDGET
51266	EXCESS COST GRANT REVENUE	\$ (2,857)	\$ (7,170)	\$ (7,170)	\$ (29,540)	\$ (5,860)	\$ (1,310)	19.53%
54116	Special Education Svcs Salaries ECG	\$ (339,660)	\$ (333,218)	\$ (333,218)	\$ (29,399)	\$ (259,137)	\$ (74,081)	91.89%
54160	Transportation Services - ECG	\$ (1,270,593)	\$ (1,193,144)	\$ (1,193,144)	\$ (68,349)	\$ (944,836)	\$ (248,308)	94.58%
	Tuition - Out of District ECG	\$ (1,613,110)	\$ (1,533,532)	\$ (1,533,532)	\$ (127,288)	\$ (1,209,833)	\$ (323,699)	92.34%
	Total	Variance Jan - March \$ 79,578	\$	\$	\$	Total*	\$ (1,533,532)	
						*75% of Jan Proj		

SDE MAGNET TRANSPORTATION GRANT	APPROVED BUDGET	ANTICIPATED	RECEIVED	BALANCE	% RECEIVED	
\$ (13,000)	\$ (9,100)	\$ (9,100)	\$ (9,100)	\$ (11,700)	(6,500) \$ (2,600)	43.75%
<u>OTHER REVENUES</u>						
<u>BOARD OF EDUCATION FEES & CHARGES - SER'</u>						
LOCAL TUITION	\$32,430		\$38,882	(\$6,452)	119.89%	
HIGH SCHOOL FEES FOR PARKING PERMITS	\$30,000		\$30,000	\$0	100.00%	
MISCELLANEOUS FEES	\$6,000		\$2,148	\$3,852	35.79%	
TOTAL SCHOOL GENERATED FEES	\$68,430		\$71,029	(\$2,599)	103.80%	
<u>OTHER GRANTS</u>						
ESSER II	\$625,532	\$368,934	\$208,151	\$48,447	92.26%	
ESSER III (estimated \$809k for 21-22 use)	\$809,095	\$472,652	\$229,357	\$107,086	86.76%	

Cummulative Emergency Repair Service- Over \$5,000 - District 2021-2022

Date	School	Vendor	Repair	Cost	Quoted/Bid State/Other
July	NHS	Harry Grodsky & Co.	F-wing Chiller - repairs to leaking chiller heat exchanger & refrigerant leaks	<u>\$16,328.41</u>	Service Contract P2200014
August	SHS NHS	Trane Harry Grodsky & Co	Chiller repair - repair refrigerant leak on chiller Repair of leaking chiller heat exchanger & refrigerant	\$11,444.32 \$16,328.00	Service Contracts P2200654 P2200014
Total				\$27,772.32	
September	NMS	N.E. Masonry & Roofing	Replace/repair stucco panel on exterior bldg, 2nd floor, Rm A-23	\$9,895.00	Bid Waiver P2201249
October		No Emergency Repairs			
November	NHS	Harry Grodsky & Co.	Repair blower shaft and bearing assembly for Unit HV-6 (Pool)	\$7,671.31	Service Contract P2201 658
December		No Emergency Repairs			
January	HOM	Trane	Replace supply fanmotor for AHU-1	\$8,220.63	Service Contract P2202009
February		No Emergency Repairs			
March	NHS	B&G Piping	Remove damaged wate pipe in C-wing lower level in Rm c-085 and adjoining boy's and girl's restrooms. Install new waste pipe, fittings, etc.	\$23,995.00	Bid Waiver P2202544
Yrly Total				\$93,882.67	

African American/Black and Puerto Rican/Latino Course of Studies

CT PA 19-12 and CT PA 21-2
Mrs. Amy Deeb
Dr. Kimberly Longobucco

Curriculum Development Process

- 150 Member Advisory Group (cyclical and critical feedback)
- Organized into 9 Committees:
 - Research and Analysis
 - Focus Groups
 - Infrastructure Supports
 - Course Syllabus
 - Content Development
 - Integration and Assessment
 - Professional Learning
 - Publications and Dissemination

What Course Is and Is Not

- Is a full-year, history course
- Is 11 units of study over 170 days
- Is cross-cultural, inquiry-based, and student-centered
- Is two-pronged focus: content knowledge and identity development
- Not a separate history
- Not simply a collection of teaching materials
- Not a panacea

Training, Coaching and Supports

- Leadership launch 4/27/22
- Summer Institute (5 days)
- Quarterly Training- September, December, February, March (2 days each)
- Coaching
- Regional Networking Meetings

Course Description for Program of Studies

AFRICAN AMERICAN/BLACK AND PUERTO RICAN/LATINO STUDIES 1 credit Full year

The course is an opportunity for students to explore accomplishments, struggles, intersections, perspectives, and collaborations of African American/Black and Puerto Rican/Latino people in the U.S. Students will examine how historical movements, legislation, and wars affected the citizenship rights of these groups and how they, both separately and together, worked to build U.S. cultural and economic wealth and create more just societies in local, national, and international contexts.

Coursework will provide students with tools to identify historic and contemporary tensions around race and difference; map economic and racial disparities over time; strengthen their own identity development; and address bias in their communities. This course is an elective for juniors and seniors.

Prerequisite: Western Studies, United States History/American Studies/AP American History (enrolled/taken).

Course Outline- Semester 1

Semester 1- African American/Black

Unit 1: African Origins and Contributions of Ancient African Empires

Unit 2: Slavery and Freedom Stories of Resistance and Agency

Unit 3: Black Literacy, Organizations and Liberations

Unit 4: Long, Long History for Equality

Unit 5: Black Movement for Equity

Unit 6: Protest, Politics and Power

Curriculum link: <https://pa1912.serc.co/>

Course Outline-Semester 2

Semester 2: Puerto Rican/Latino

Unit 1: Who are we? Early Beginnings

Unit 2: Blood and Beauty

Unit 3: Sweat

Unit 4: Resistance

Unit 5: Where are we now? Contributions in CT

***Learning Objectives, and Scope and Sequence available on website:

<https://ctserc.org/pa1912>

Additional information

- Making History: The Black and Latino Studies Documentary

<https://ctserc.org/news/2019/making-history-the-black-and-latino-studies-documentary>

- Full curriculum: <https://pa1912.serc.co/>

Note: All information for slides taken from CT Department of Education/SERC and the African American/Black and Puerto Rican and Latino Studies PowerPoint



3 Curriculum Developers

Unit:	Lessons	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
		1 2 3 4 5	6 7 8 9	10 11 12	13 14 15 16	17 18 19 20	21 22 23 24	25 26 27 28 29	30 31 32	33 34 35 36	37 38
Robots Over Paper Bridges	0	█									
Flat Earth: Claims or Evidence?	0		█								
Computer Programming	0			█							
Lux Blox Slower Coasters	0				█						
Water Cycle Investigations	0					█					
Edison Robot Mazes	0									█	
KEVA Cantilever Challenge	0										█

◀ Previous Year



Unit Planner: Robots Over Paper Bridges Integrated STEM Gr. 6

Monday, March 28, 2022, 9:21AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 1 - Week 7

Last Updated: Wednesday, March 23, 2022
by Peter Bernson

Robots Over Paper Bridges

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

Unit Web Template (Optional)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Structure and Function

Concepts: properties, materials, structure, suitability, solutions, engineering design

G

Generalizations / Enduring Understandings

1. Properties of materials determine the suitability for designing solutions to problems.
2. Alteration of a material's structure changes the effectiveness of the material's application.
3. Design solutions can be compared and improved to solve engineering problems.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

1. Properties of materials determine the suitability for designing solutions to problems.

- What material properties does paper have? (F)
- Which properties of paper are advantageous for bridge building? (C)
- Why is paper not used in real-world bridge construction? (C)
- Is there a single best material for bridge building? (P)

2. Alteration of a material's structure changes the effectiveness of its application

- Can the properties of paper be manipulated to improve its ability to support a load? (C)

3. Design solutions can be compared and improved to solve engineering problems.

- What are the typical structural components of a bridge? (F)
- What is a static load? (F)
- What is a dynamic load? (F)
- How are the structural considerations different for a bridge carrying a dynamic load compared to a static load? (C)
- What determines when enough testing has been done to ensure the safety or effectiveness of a structure (P)?

Standard(s)

NGSS: Science and Engineering Practices

NGSS: 6-8

Practice 1. Asking questions (for science) and defining problems (for engineering)

Asking questions and defining problems in 6–8 builds on K–5 experiences and progresses to specifying relationships between variables, and clarifying arguments and models.

Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions.

Practice 6. Constructing explanations (for science) and designing solutions (for engineering)

Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.

Undertake a design project, engaging in the design cycle, to construct and/or implement a solution that meets specific design criteria and constraints.

NGSS: Crosscutting Concepts

NGSS: 6-8

Crosscutting Statements

6. Structure and Function – The way an object is shaped or structured determines many of its properties and functions.

Structures can be designed to serve particular functions by taking into account properties of different materials, and how materials can be shaped and used.

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Access the interactive version of the NGSS [here](#)

Critical Content & Skills


*What students must **KNOW** and be able to **DO***

Students must know and/or be able to:

- work effectively in a collaborative group.
- engage in the Engineering Design Process.
- manipulate the structure of paper to effectively build a bridge made of paper that can support a robot driving over it.
- program a remote control using barcodes that can control the drive motors of an Edison robot.

Core Learning Activities


See linked document for unit plan and activities.

 [6th - Robots Over Paper Bridges Unit Plan](#)

 [6th - Paper Bridges instructions](#)

Assessments


**Collaborative Rubric - Edison Bridges
Summative: Group Project**

 [Collaborative Rubric - Edison Bridges](#)

Resources

Professional & Student

See linked folder for all unit resources.

 [\(6th\) - Robots Over Paper Bridges
Edison Bar Codes Resource Page](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

[Written Performance](#)

Interdisciplinary Connections



Unit Planner: Flat Earth: Claims or Evidence? Integrated STEM Gr. 6

Monday, March 28, 2022, 9:23AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 8 - Week 12

Last Updated: Wednesday, March 23, 2022
by Peter Bernson

Flat Earth: Claims or Evidence?

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

Unit Web Template (Optional)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Scientific Argumentation

Concepts: claims, evidence, reasoning, evaluation, gravity, astronomical patterns

G

Generalizations / Enduring Understandings

1. Observation of the Earth and sky provides evidence for claims about the nature of the planet.
2. Critical evaluation of evidence determines the validity of claims.
3. Scientific laws provide reasonable explanations for observable phenomena.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

1. Observation of the Earth and sky provides evidence for claims about the nature of the planet.

- What is gravity? (F)
- What shape is the Earth? (F)
- What direction is down? (C)
- What constitutes evidence to support claims about the Earth's shape? (C)
- Are there evidence based claims to support the belief that the Earth is flat? (P)

2. Critical evaluation of evidence determines the validity of claims.

- What is a scientific claim? (F)
- What process leads to an informed decision? (C)
- How can evidence be used to evaluate a scientific claim? (C)
- Is it important to distinguish between scientific claims and nonscientific claims? (P)
- Is it important to acknowledge the weaknesses of your argument? (P)
- Are some claims more valid than others? (P)

3. Scientific laws provide reasonable explanations for observable phenomena.

- What is gravity? (F)
- How do scientists respond to different perspectives? (C)
- How does science change over time? (C)
- Which direction is down? (P)

Standard(s)

Connecticut Core Standards / Content Standards

NGSS: Science and Engineering Practices

NGSS: 6-8

Practice 4. Analyzing and interpreting data

Analyzing data in 6–8 builds on K–5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis.

Analyze and interpret data to provide evidence for phenomena.

Practice 6. Constructing explanations (for science) and designing solutions (for engineering)

Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.

Construct an explanation using models or representations.

Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.

Apply scientific ideas, principles, and/or evidence to construct, revise and/or use an explanation for real-world phenomena, examples, or events.

Apply scientific reasoning to show why the data or evidence is adequate for the explanation or conclusion.

Practice 7. Engaging in argument from evidence

Engaging in argument from evidence in 6–8 builds on K–5 experiences and progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed world(s).

Compare and critique two arguments on the same topic and analyze whether they emphasize similar or different evidence and/or interpretations of facts.

Respectfully provide and receive critiques about one's explanations, procedures, models, and questions by citing relevant evidence and posing and responding to questions that elicit pertinent elaboration and detail.

Construct, use, and/or present an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.

Practice 8. Obtaining, evaluating, and communicating information

Obtaining, evaluating, and communicating information in 6–8 builds on K–5 experiences and progresses to evaluating the merit and validity of ideas and methods.

Evaluate data, hypotheses, and/or conclusions in scientific and technical texts in light of competing information or accounts.

Connections to the Nature of Science: Most Closely Associated with Practices

Scientific Knowledge is Based on Empirical Evidence

Science knowledge is based upon logical and conceptual connections between evidence and explanations.

Scientific Knowledge is Open to Revision in Light of New Evidence

Scientific explanations are subject to revision and improvement in light of new evidence.

NGSS: Disciplinary Core Ideas

NGSS: Grade 5

PS2: Motion and Stability: Forces and Interactions

PS2.B: Types of Interactions

The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center. (5-PS2-1)

NGSS: 6-8

PS2: Motion and Stability: Forces and Interactions

PS2.B: Types of Interactions

Gravitational forces are always attractive. There is a gravitational force between any two masses, but it is very small except when one or both of the objects have large mass—e.g., Earth and the sun. (MS-PS2-4)

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Access the interactive version of the NGSS [here](#)

Critical Content & Skills

What students must **KNOW and be able to DO**

Students must know and/or be able to:

- understand that massive objects like Earth exert a gravitational force toward their center of gravity.
- compare relative sizes and proportions of the elements of an Earth model.
- critically evaluate claims based on evidence and reasoning.
- determine the relative validity of different sources of scientific information.
- navigate and complete an activity on the Edpuzzle platform.

Core Learning Activities

See linked unit plan below.



[Unit 2 \(6th\) - Flat Earth Claims/Evidence Unit Plan](#)



[Is the Earth Really Round?](#)



[Wonderings About the Flat Earth Model \(by class\)](#)

Assessments

Looking Through the Earth

Formative: Other written assessments

Students select an answer and explain why it best describes what they think they would see if they could look straight through to the other side of the Earth.



[Looking Through the Earth \(probe\)](#)

Flat Earth: Claims, or Evidence?

Formative: Other written assessments

Video-based quiz requiring analysis of Flat Earth claims.

Resources

Professional & Student

See linked folder for all unit resources.



[6th - Flat Earth Claims/Evidence](#)



[Where Do People Live? Probe Data](#)

[The Earth Is Curved - Ask a Spaceman video](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

[Written Performance](#)

Interdisciplinary Connections

STEM connections to the regular classroom:

- Science - supports instruction for following Performance Expectations: [5-PS2-1](#); [MS-PS2-4](#)



Unit Planner: Computer Programming Integrated STEM Gr. 6

Monday, March 28, 2022, 10:10AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 13 - Week 16

Last Updated: Thursday, March 24, 2022 by
Peter Bernson

Computer Programming

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

Unit Web Template (Optional)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Human/Machine Interaction

Concepts: block-based programming, language-based programming, translation

G

Generalizations / Enduring Understandings

1. Computer programming languages translate instructions into a language computers understand to effect a desired outcome.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

1. People control computers by translating commands into programming languages.

- What is block-based programming? (F)
- What is language-based programming? (F)
- How does language-based programming differ from block-based programming? (C)
- How do programming languages compare to spoken languages? (C)
- Is it more effective to work on computer programming as part of a team or individually? (P)

Standard(s)

Connecticut Core Standards / Content Standards

CSTA: Computer Science Standards (2017)

CSTA: 6–8

Practices

Practice 2. Collaborating Around Computing

By the end of Grade 12, students should be able to:

3. Solicit and incorporate feedback from, and provide constructive feedback to, team members and other stakeholders.

Practice 5. Creating Computational Artifacts

By the end of Grade 12, students should be able to:

1. Plan the development of a computational artifact using an iterative process that includes reflection on and modification of the plan, taking into account key features, time and resource constraints, and user expectations.
2. Create a computational artifact for practical intent, personal expression, or to address a societal issue.

Critical Content & Skills


What students must **KNOW and be able to DO**


Students must know and/or be able to:

- use block-based programming to create a game or story using the code.org platform.
- share completed game/story with others by link or text message.
- understand the difference between block-based and text-based programming languages.
- follow detailed tutorial directions independently in order to learn basic JavaScript syntax and commands.
- apply JavaScript programming to create their own meme based on BrainPOP characters.
- take a screenshot of a selected area of their Chromebook screen.
- access saved files on their Chromebook and upload to an online space to share (Padlet).
- provide peer feedback and self-assess their comfort level with a challenging new skill.

Core Learning Activities

See documents linked below for unit plan and activities.

 [6th - Computer Programming Unit Plan](#)

 [6th - Computer Programming](#)

[Sample Padlet page for posting work](#)

Assessments

JavaScript Meme

Formative: Technology Project

Students create a meme using JavaScript, post it to an online bulletin board (Padlet), view peers' work, provide feedback, and self-assess personal confidence level.


[Padlet Dashboard](#)

[Padlet: sample template for directions and class posting](#)

Resources

Professional & Student

See folder linked below for unit resources.

 [Unit 3 \(6th\) - Hour of Code](#)

[BrainPop Login Page](#)

[BrainPop Vidcode JavaScript page](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

[Written Performance](#)

Interdisciplinary Connections

STEM Connections to other classes:

- Technology - exploring common coding languages
- Spanish - relationship between spoken/written languages and computer programming languages



Unit Planner: Lux Blox Slower Coasters Integrated STEM Gr. 6

Monday, March 28, 2022, 9:25AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 17 - Week 23

Last Updated: Thursday, March 24, 2022 by
Peter Bernson

Lux Blox Slower Coasters

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

[Unit Web Template \(Optional\)](#)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Energy and Matter

Concepts: potential energy, kinetic energy, energy transformations, conservation of energy, systems

G

Generalizations / Enduring Understandings

1. Potential energy can transform into kinetic energy and back into potential energy in a cycle.
2. Energy must be conserved, so its transformations can be traced through a system.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

1. Potential energy can transform into kinetic energy and back into potential energy in a cycle.

- What is gravitational potential energy? (F)
- What other kinds of potential energy are there? (F)
- What is kinetic energy (F)
- How is potential energy transformed into kinetic energy in a roller coaster? (C)
- Can a roller coaster ever get as high as its initial starting height? (P)

2. Energy must be conserved, so its transformations can be traced through a system.

- What variables can be manipulated to slow down a ball going down a track? (F)
- What forces are acting on the ball that affect its energy? (F)
- Why must energy be conserved? (C)
- How can energy transformations be controlled? (C)
- What other energy transformation(s) take place when the roller coaster's potential energy changes to kinetic energy? (C)

Standard(s)

Connecticut Core Standards / Content Standards

NGSS: Disciplinary Core Ideas

NGSS: Grade 5

PS2: Motion and Stability: Forces and Interactions

PS2.B: Types of Interactions

The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center. (5-PS2-1)

PS3: Energy

PS3.D: Energy in Chemical Processes and Everyday Life

The energy released [from] food was once energy from the sun that was captured by plants in the chemical process that forms plant matter (from air and water). (5-PS3-1)

NGSS: 6-8

PS2: Motion and Stability: Forces and Interactions

PS2.A: Forces and Motion

The motion of an object is determined by the sum of the forces acting on it; if the total force on the object is not zero, its motion will change. The greater the mass of the object, the greater the force needed to achieve the same change in motion. For any given object, a larger force causes a larger change in motion. (MS-PS2-2)

PS3: Energy

PS3.A: Definitions of Energy

Motion energy is properly called kinetic energy; it is proportional to the mass of the moving object and grows with the square of its speed. (MS-PS3-1)

A system of objects may also contain stored (potential) energy, depending on their relative positions. (MS-PS3-2)

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Access the interactive version of the NGSS [here](#)

Critical Content & Skills


*What students must **KNOW and be able to DO***

Students must know and/or be able to:

- understand that there are many different types of energy.
- distinguish *gravitational potential energy* from *kinetic energy*.
- know that energy is always *conserved*, but it can be *transformed* into other types of energy.
- work collaboratively to construct Lux Blox tracks that can carry a ping pong ball.
- adjust track variables (e.g. ramp height and slope, turns, track width, amount of friction) to effectively manage the transformation of potential energy into kinetic energy.
- use an iPad to record photos and video.
- use the markup tools to annotate iPad photos in order to demonstrate their understanding of energy concepts.


Core Learning Activities

See document linked below for unit plan and activities.

 [6th - Lux Blox Slower Coasters](#)

Assessments


Summative: Group Project

 [2022 Collaborative Group Work Rubric - Lux Blox Slower Coasters \(COVID-6th\)](#)

Annotated iPad Photos

Summative: Other Visual Assessments

Students annotate photos of their final track design to demonstrate their knowledge of unit concepts.

 [Lux Coaster photo markup example.jpeg](#)

Resources

Professional & Student

See folder linked below for unit resources.

 [Unit 4 \(6th\) - Lux Blox Slower Coasters](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

Interdisciplinary Connections

STEM connections to the regular classroom:

- Science - supports instruction for the following Performance Expectations:

Written Performance

- Grade 5: 5-PS2-1, 5-PS3-1,
- Grade 6: MS-PS3-2, MS-PS3-5



Unit Planner: Water Cycle Investigations Integrated STEM Gr. 6

Monday, March 28, 2022, 9:27AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 24 - Week 32

Last Updated: Thursday, March 24, 2022 by
Peter Bernson

Water Cycle Investigations

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

[Unit Web Template \(Optional\)](#)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Systems and System Models

Concepts: systems, modeling, investigation design, energy, matter, viral spread

G

Generalizations / Enduring Understandings

1. Energy and matter flow into, out of, and within systems.
2. Designing investigations enables the use of models to help explain, understand, and predict phenomena in order to solve real world problems.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

1. Systems have inputs, processes and outputs allowing energy and matter flows within them.

- What is a system? (F)
- What are the components of the water cycle? (F)
- How can the processes within a system be influenced? (C)

2. Designing investigations enables the use of models to help explain, understand, and predict phenomena in order to solve real world problems.

- What is a control? (F)
- What is a variable? (F)
- Why do variables need to be controlled in an investigation? (C)
- How does modeling a system's components help to understand the entire system? (C)
- What limitations do models have? (C)
- How do you know when the data generated by models is reliable enough to apply in real world situations? (P)

Standard(s)

Connecticut Core Standards / Content Standards

NGSS: Science and Engineering Practices

NGSS: 6-8

Practice 2. Developing and using models

Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.

Develop or modify a model—based on evidence – to match what happens if a variable or component of a system

is changed.

Develop and/or revise a model to show the relationships among variables, including those that are not observable but predict observable phenomena.

Practice 3. Planning and carrying out investigations

Planning and carrying out investigations in 6-8 builds on K-5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or solutions.

Plan an investigation individually and collaboratively, and in the design: identify independent and dependent variables and controls, what tools are needed to do the gathering, how measurements will be recorded, and how many data are needed to support a claim.

Collect data to produce data to serve as the basis for evidence to answer scientific questions or test design solutions under a range of conditions.

NGSS: Crosscutting Concepts

NGSS: 6-8

Crosscutting Statements

4. Systems and System Models – A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems.

Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems.

Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy, matter, and information flows within systems.

Models are limited in that they only represent certain aspects of the system under study.

NGSS: Disciplinary Core Ideas

NGSS: Grade 5

ESS2: Earth's Systems

ESS2.A: Earth Materials and Systems

Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to determine patterns of weather. (5-ESS2-1)

PS1: Matter and Its Interactions

PS1.A: Structure and Properties of Matter

Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means. A model shows that gases are made from matter particles that are too small to see and are moving freely around in space can explain many observations, including the inflation and shape of a balloon; the effects of air on larger particles or objects. (5-PS1-1)

NGSS: 6-8

ESS2: Earth's Systems

ESS2.C: The Roles of Water in Earth's Surface Processes

Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land. (MS-ESS2-4)

ETS1: Engineering Design

ETS1.B: Developing Possible Solutions

Models of all kinds are important for testing solutions. (MS-ETS1-4)

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Access the interactive version of the NGSS [here](#)

Critical Content & Skills

*What students must **KNOW** and **be able to DO***

Students must know and/or be able to:

- trace water as it cycles through Earth's atmosphere in different phases as a gas, liquid, or solid.
- recognize that water vapor is present in the air even though we cannot see it.
- understand that when more water vapor is present in the air, viral spread is lessened.
- work collaboratively to design an investigation to demonstrate that invisible water vapor is present in air.
- use PocketLab sensors to measure multiple conditions within a system (e.g. temperature, relative humidity, dew point).
- test variables that affect the amount of water vapor in a closed system.
- use scientific reasoning to support claims based on evidence from their investigation.
- design a system by manipulating variables to achieve a target humidity that could limit the spread of viruses.

Core Learning Activities

See document linked below for unit plan and activities.



[Unit 5 \(6th\) - Water Cycle Investigations Unit Plan](#)



[6th - Water Cycle/PocketLab intro](#)



[Water Vapor Test Brainstorming TEMPLATE](#)



[Water Vapor Test Recording Sheet](#)

Assessments

Wet Jeans Google Form

Formative: Other written assessments

Students complete a Google Form to establish their prior conceptions about the evaporation process and to provide a basis for argumentation.



[Wet Jeans](#)

Group Water Cycle Models

Formative: Other Visual Assessments

Groups of 3-4 students use Google Slides design tools create models of the water cycle to develop and share their understanding of unit content (see sample, attached).



[10 Sample Wet Jeans/Water Cycle Models](#)

Investigation Plan

Formative: Lab Assignment

Students design an investigation using PocketLab sensors to test a variable of their choice using a water cycle model.



[Water Vapor Tests - Independent Designs Recording Sheet](#)

Resources

Professional & Student

See folder linked below for unit resources.



[Unit 5 \(6th\) - Water Cycle Investigations](#)



[Wet Jeans Probe Data](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

[Written Performance](#)

Interdisciplinary Connections

STEM connections to the regular classroom:

- Science - supports instruction for following Performance Expectations: [5-ESS2-1](#), [5-PS1-1](#), [MS-ESS2-4](#)



Unit Planner: Edison Robot Mazes Integrated STEM Gr. 6

Monday, March 28, 2022, 9:28AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 33 - Week 36

Last Updated: Thursday, March 24, 2022 by
Peter Bernson

Edison Robot Mazes

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

Unit Web Template (Optional)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Human/Machine Interaction

Concepts: robots, programmers, procedural programming, autonomous programming, problem solving

G

Generalizations / Enduring Understandings

1. Robot programmers employ procedural and/or autonomous programming methods to solve a given problem.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

1. Robot programmers employ procedural and/or autonomous programming methods to solve a given problem.

- What is a robot? (F)
- What is procedural programming? (F)
- What is autonomous programming? (F)
- How does programming a robot to follow a predetermined path differ from programming one to navigate autonomously? (C)
- Is one type of programming best? (P)

Standard(s)

Connecticut Core Standards / Content Standards

ISTE: Educational Technology (2016)

ISTE: All Grades

5. Computational Thinker

Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. Students:

c. break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

6. Creative Communicator

Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals. Students:

a. choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.

7. Global Collaborator

Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally. Students:

c. contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

2016 ISTE Standards

Students 2016 ISTE Standards for Students, ©2016, ISTE® (International Society for Technology in Education), iste.org. All rights reserved.

Critical Content & Skills

What students must **KNOW and be able to DO**

Students must know and/or be able to:


- recognize that machines can be programmed in different ways using different approaches.
- use Scratch-based block programming language to procedurally guide a robot.
- control a robot drive motors to navigate a maze step by step by:
 - manipulating both time and distance variables to control robot's forward motion.
 - manipulating angle measure variables to control robot's spin.

OR

- program robot drive motors and sensors to navigate a maze autonomously.

Core Learning Activities

See linked document below for unit plan.


 [6th - Edison Robot Mazes Unit Plan](#)

 [6th - Edison Robot Mazes](#)

Assessments

Robot Maze Rubric

Summative: Technology Project

 [Collaborative Group Work Rubric - Edison Mazes](#)

Resources

Professional & Student

See linked folder below for unit resources.

 [\(6th\) - Edison Robot Mazes](#)

[Introductory Edison Maze Activity](#)

[Edison Mini-Maze Challenge](#)

[Edison Autonomous Maze Challenge Video](#)

[Autonomous Robotics Maze Challenge #2 Video](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

[Written Performance](#)

Interdisciplinary Connections

STEM connections to other classrooms:

- Math - use metric units of measure, estimate angles
- Music - program a song robot can play while navigating maze
- Technology - use Python- and Scratch-based programming platforms



Unit Planner: KEVA Cantilever Challenge Integrated STEM Gr. 6

Monday, March 28, 2022, 9:29AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 37 - Week 38

Last Updated: Thursday, March 24, 2022 by
Peter Bernson

KEVA Cantilever Challenge

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

[Unit Web Template \(Optional\)](#)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Systems

Concepts: structures/substructures, systems/subsystems, properties of materials

G

Generalizations / Enduring Understandings

1. Structures and their substructures form systems that can be modeled and designed to meet specific criteria.
2. The properties of materials used in a structure determine their utility
3. Structures form complex systems and subsystems

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

- What is a cantilever? (F)
- How are cantilevers useful in solving design problems? (C)
- What properties of materials determine their suitability for use in building cantilevers? (C)
- How can a model of a system or subsystem help to meet engineering design criteria? (C)
- Is there a mathematical relationship between a KEVA cantilever's beam length and the mass needed to anchor it? (P)
- Are cantilevered structures less safe than fully supported ones? (P)

Standard(s)

Connecticut Core Standards / Content Standards

NGSS: Science and Engineering Practices

NGSS: 6-8

Practice 2. Developing and using models

Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.

Develop or modify a model—based on evidence – to match what happens if a variable or component of a system is changed.

Develop and/or use a model to generate data to test ideas about phenomena in natural or designed systems, including those representing inputs and outputs, and those at unobservable scales.

NGSS: Crosscutting Concepts

NGSS: 6-8

Crosscutting Statements

4. Systems and System Models – A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems.

Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems.

Models are limited in that they only represent certain aspects of the system under study.

NGSS: Disciplinary Core Ideas

NGSS: 6-8

ETS1: Engineering Design

ETS1.B: Developing Possible Solutions

A solution needs to be tested, and then modified on the basis of the test results, in order to improve it. (MS-ETS1-4) (secondary to MS-PS1-6)

There are systematic processes for evaluating solutions with respect to how well they meet criteria and constraints of a problem. MS-ETS1-2), (MS-ETS1-3) (secondary to MS-PS3-3) (secondary to MS-LS2-5)

Models of all kinds are important for testing solutions. (MS-ETS1-4)

ETS1.C: Optimizing the Design Solution

The iterative process of testing the most promising solutions and modifying what is proposed on the basis of the test results leads to greater refinement and ultimately to an optimal solution. (MSETS1-4) (secondary to MS-PS1-6)

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Access the interactive version of the NGSS [here](#)

Critical Content & Skills

*What students must **KNOW and be able to DO***

Students must know and/or be able to:

- identify and build a cantilever.
- recognize how cantilevers can be useful in building.
- understand how structures and their substructures form a system.
- model a system or subsystems to help to meet design goals.
- complete a video lesson/formative quiz introduction to cantilevers.
- use the Engineering Design Process to build multiple iterations of a design in order to maximize cantilever length.

Core Learning Activities

See linked document below for unit plan.

[Unit 7 \(6th\) - KEVA Cantilever Challenge Unit Plan](#)

[6th - KEVA Cantilever Challenge](#)

Assessments

KEVA Cantilevers

Formative: Group Project

Anecdotal observation of student collaborative design and testing of KEVA plank cantilevered structures.

EdPuzzle Cantilever Video/Assessment

Formative: Other Visual Assessments

[EdPuzzle Link](#)

Resources

Professional & Student

See linked folder below for unit resources.

[6th - KEVA Cantilevers](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

[Written Performance](#)

Interdisciplinary Connections

-



Newtown Public Schools
Integrated STEM Gr. 6

Course Assignments > Reed Intermediate School / Grade 6 / Science / Integrated STEM Gr. 6

3 Curriculum Developers

Unit:	Lessons	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
		1 2 3 4 5	6 7 8 9	10 11 12	13 14 15 16	17 18 19 20	21 22 23 24	25 26 27 28 29	30 31 32	33 34 35 36	37 38
Robots Over Paper Bridges	0	█									
Flat Earth: Claims or Evidence?	0		█								
Computer Programming	0			█							
Lux Blox Slower Coasters	0				█						
Water Cycle Investigations	0					█					
Edison Robot Mazes	0									█	
KEVA Cantilever Challenge	0										█

◀ Previous Year



Unit Planner: Robots Over Paper Bridges Integrated STEM Gr. 6

Monday, March 28, 2022, 9:21AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 1 - Week 7

Last Updated: Wednesday, March 23, 2022
by Peter Bernson

Robots Over Paper Bridges

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

Unit Web Template (Optional)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Structure and Function

Concepts: properties, materials, structure, suitability, solutions, engineering design

G

Generalizations / Enduring Understandings

1. Properties of materials determine the suitability for designing solutions to problems.
2. Alteration of a material's structure changes the effectiveness of the material's application.
3. Design solutions can be compared and improved to solve engineering problems.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

1. Properties of materials determine the suitability for designing solutions to problems.

- What material properties does paper have? (F)
- Which properties of paper are advantageous for bridge building? (C)
- Why is paper not used in real-world bridge construction? (C)
- Is there a single best material for bridge building? (P)

2. Alteration of a material's structure changes the effectiveness of its application

- Can the properties of paper be manipulated to improve its ability to support a load? (C)

3. Design solutions can be compared and improved to solve engineering problems.

- What are the typical structural components of a bridge? (F)
- What is a static load? (F)
- What is a dynamic load? (F)
- How are the structural considerations different for a bridge carrying a dynamic load compared to a static load? (C)
- What determines when enough testing has been done to ensure the safety or effectiveness of a structure (P)?

Standard(s)

NGSS: Science and Engineering Practices

NGSS: 6-8

Practice 1. Asking questions (for science) and defining problems (for engineering)

Asking questions and defining problems in 6–8 builds on K–5 experiences and progresses to specifying relationships between variables, and clarifying arguments and models.

Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions.

Practice 6. Constructing explanations (for science) and designing solutions (for engineering)

Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.

Undertake a design project, engaging in the design cycle, to construct and/or implement a solution that meets specific design criteria and constraints.

NGSS: Crosscutting Concepts

NGSS: 6-8

Crosscutting Statements

6. Structure and Function – The way an object is shaped or structured determines many of its properties and functions.

Structures can be designed to serve particular functions by taking into account properties of different materials, and how materials can be shaped and used.

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Access the interactive version of the NGSS [here](#)

Critical Content & Skills


*What students must **KNOW** and **be able to DO***

Students must know and/or be able to:

- work effectively in a collaborative group.
- engage in the Engineering Design Process.
- manipulate the structure of paper to effectively build a bridge made of paper that can support a robot driving over it.
- program a remote control using barcodes that can control the drive motors of an Edison robot.

Core Learning Activities


See linked document for unit plan and activities.

 [6th - Robots Over Paper Bridges Unit Plan](#)

 [6th - Paper Bridges instructions](#)

Assessments


**Collaborative Rubric - Edison Bridges
Summative: Group Project**

 [Collaborative Rubric - Edison Bridges](#)

Resources

Professional & Student

See linked folder for all unit resources.

 [\(6th\) - Robots Over Paper Bridges
Edison Bar Codes Resource Page](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

[Written Performance](#)

Interdisciplinary Connections



Unit Planner: Flat Earth: Claims or Evidence? Integrated STEM Gr. 6

Monday, March 28, 2022, 9:23AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 8 - Week 12

Last Updated: Wednesday, March 23, 2022
by Peter Bernson

Flat Earth: Claims or Evidence?

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

Unit Web Template (Optional)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Scientific Argumentation

Concepts: claims, evidence, reasoning, evaluation, gravity, astronomical patterns

G

Generalizations / Enduring Understandings

1. Observation of the Earth and sky provides evidence for claims about the nature of the planet.
2. Critical evaluation of evidence determines the validity of claims.
3. Scientific laws provide reasonable explanations for observable phenomena.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

1. Observation of the Earth and sky provides evidence for claims about the nature of the planet.

- What is gravity? (F)
- What shape is the Earth? (F)
- What direction is down? (C)
- What constitutes evidence to support claims about the Earth's shape? (C)
- Are there evidence based claims to support the belief that the Earth is flat? (P)

2. Critical evaluation of evidence determines the validity of claims.

- What is a scientific claim? (F)
- What process leads to an informed decision? (C)
- How can evidence be used to evaluate a scientific claim? (C)
- Is it important to distinguish between scientific claims and nonscientific claims? (P)
- Is it important to acknowledge the weaknesses of your argument? (P)
- Are some claims more valid than others? (P)

3. Scientific laws provide reasonable explanations for observable phenomena.

- What is gravity? (F)
- How do scientists respond to different perspectives? (C)
- How does science change over time? (C)
- Which direction is down? (P)

Standard(s)

Connecticut Core Standards / Content Standards

NGSS: Science and Engineering Practices

NGSS: 6-8

Practice 4. Analyzing and interpreting data

Analyzing data in 6–8 builds on K–5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis.

Analyze and interpret data to provide evidence for phenomena.

Practice 6. Constructing explanations (for science) and designing solutions (for engineering)

Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.

Construct an explanation using models or representations.

Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.

Apply scientific ideas, principles, and/or evidence to construct, revise and/or use an explanation for real-world phenomena, examples, or events.

Apply scientific reasoning to show why the data or evidence is adequate for the explanation or conclusion.

Practice 7. Engaging in argument from evidence

Engaging in argument from evidence in 6–8 builds on K–5 experiences and progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed world(s).

Compare and critique two arguments on the same topic and analyze whether they emphasize similar or different evidence and/or interpretations of facts.

Respectfully provide and receive critiques about one's explanations, procedures, models, and questions by citing relevant evidence and posing and responding to questions that elicit pertinent elaboration and detail.

Construct, use, and/or present an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.

Practice 8. Obtaining, evaluating, and communicating information

Obtaining, evaluating, and communicating information in 6–8 builds on K–5 experiences and progresses to evaluating the merit and validity of ideas and methods.

Evaluate data, hypotheses, and/or conclusions in scientific and technical texts in light of competing information or accounts.

Connections to the Nature of Science: Most Closely Associated with Practices

Scientific Knowledge is Based on Empirical Evidence

Science knowledge is based upon logical and conceptual connections between evidence and explanations.

Scientific Knowledge is Open to Revision in Light of New Evidence

Scientific explanations are subject to revision and improvement in light of new evidence.

NGSS: Disciplinary Core Ideas

NGSS: Grade 5

PS2: Motion and Stability: Forces and Interactions

PS2.B: Types of Interactions

The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center. (5-PS2-1)

NGSS: 6-8

PS2: Motion and Stability: Forces and Interactions

PS2.B: Types of Interactions

Gravitational forces are always attractive. There is a gravitational force between any two masses, but it is very small except when one or both of the objects have large mass—e.g., Earth and the sun. (MS-PS2-4)

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Access the interactive version of the NGSS [here](#)

Critical Content & Skills

What students must **KNOW and be able to DO**

Students must know and/or be able to:

- understand that massive objects like Earth exert a gravitational force toward their center of gravity.
- compare relative sizes and proportions of the elements of an Earth model.
- critically evaluate claims based on evidence and reasoning.
- determine the relative validity of different sources of scientific information.
- navigate and complete an activity on the Edpuzzle platform.

Core Learning Activities

See linked unit plan below.



[Unit 2 \(6th\) - Flat Earth Claims/Evidence Unit Plan](#)



[Is the Earth Really Round?](#)



[Wonderings About the Flat Earth Model \(by class\)](#)

Assessments

Looking Through the Earth

Formative: Other written assessments

Students select an answer and explain why it best describes what they think they would see if they could look straight through to the other side of the Earth.



[Looking Through the Earth \(probe\)](#)

Flat Earth: Claims, or Evidence?

Formative: Other written assessments

Video-based quiz requiring analysis of Flat Earth claims.

Resources

Professional & Student

See linked folder for all unit resources.



[6th - Flat Earth Claims/Evidence](#)



[Where Do People Live? Probe Data](#)

[The Earth Is Curved - Ask a Spaceman video](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

[Written Performance](#)

Interdisciplinary Connections

STEM connections to the regular classroom:

- Science - supports instruction for following Performance Expectations: [5-PS2-1](#); [MS-PS2-4](#)



Unit Planner: Computer Programming Integrated STEM Gr. 6

Monday, March 28, 2022, 10:10AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 13 - Week 16

Last Updated: Thursday, March 24, 2022 by
Peter Bernson

Computer Programming

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

Unit Web Template (Optional)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Human/Machine Interaction

Concepts: block-based programming, language-based programming, translation

G

Generalizations / Enduring Understandings

1. Computer programming languages translate instructions into a language computers understand to effect a desired outcome.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

1. People control computers by translating commands into programming languages.

- What is block-based programming? (F)
- What is language-based programming? (F)
- How does language-based programming differ from block-based programming? (C)
- How do programming languages compare to spoken languages? (C)
- Is it more effective to work on computer programming as part of a team or individually? (P)

Standard(s)

Connecticut Core Standards / Content Standards

CSTA: Computer Science Standards (2017)

CSTA: 6–8

Practices

Practice 2. Collaborating Around Computing

By the end of Grade 12, students should be able to:

3. Solicit and incorporate feedback from, and provide constructive feedback to, team members and other stakeholders.

Practice 5. Creating Computational Artifacts

By the end of Grade 12, students should be able to:

1. Plan the development of a computational artifact using an iterative process that includes reflection on and modification of the plan, taking into account key features, time and resource constraints, and user expectations.
2. Create a computational artifact for practical intent, personal expression, or to address a societal issue.

Critical Content & Skills


What students must **KNOW and be able to DO**


Students must know and/or be able to:

- use block-based programming to create a game or story using the code.org platform.
- share completed game/story with others by link or text message.
- understand the difference between block-based and text-based programming languages.
- follow detailed tutorial directions independently in order to learn basic JavaScript syntax and commands.
- apply JavaScript programming to create their own meme based on BrainPOP characters.
- take a screenshot of a selected area of their Chromebook screen.
- access saved files on their Chromebook and upload to an online space to share (Padlet).
- provide peer feedback and self-assess their comfort level with a challenging new skill.

Core Learning Activities

See documents linked below for unit plan and activities.

 [6th - Computer Programming Unit Plan](#)

 [6th - Computer Programming](#)

[Sample Padlet page for posting work](#)

Assessments

JavaScript Meme

Formative: Technology Project

Students create a meme using JavaScript, post it to an online bulletin board (Padlet), view peers' work, provide feedback, and self-assess personal confidence level.


[Padlet Dashboard](#)

[Padlet: sample template for directions and class posting](#)

Resources

Professional & Student

See folder linked below for unit resources.

 [Unit 3 \(6th\) - Hour of Code](#)

[BrainPop Login Page](#)

[BrainPop Vidcode JavaScript page](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

[Written Performance](#)

Interdisciplinary Connections

STEM Connections to other classes:

- Technology - exploring common coding languages
- Spanish - relationship between spoken/written languages and computer programming languages



Unit Planner: Lux Blox Slower Coasters Integrated STEM Gr. 6

Monday, March 28, 2022, 9:25AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 17 - Week 23

Last Updated: Thursday, March 24, 2022 by
Peter Bernson

Lux Blox Slower Coasters

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

[Unit Web Template \(Optional\)](#)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Energy and Matter

Concepts: potential energy, kinetic energy, energy transformations, conservation of energy, systems

G

Generalizations / Enduring Understandings

1. Potential energy can transform into kinetic energy and back into potential energy in a cycle.
2. Energy must be conserved, so its transformations can be traced through a system.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

1. Potential energy can transform into kinetic energy and back into potential energy in a cycle.

- What is gravitational potential energy? (F)
- What other kinds of potential energy are there? (F)
- What is kinetic energy (F)
- How is potential energy transformed into kinetic energy in a roller coaster? (C)
- Can a roller coaster ever get as high as its initial starting height? (P)

2. Energy must be conserved, so its transformations can be traced through a system.

- What variables can be manipulated to slow down a ball going down a track? (F)
- What forces are acting on the ball that affect its energy? (F)
- Why must energy be conserved? (C)
- How can energy transformations be controlled? (C)
- What other energy transformation(s) take place when the roller coaster's potential energy changes to kinetic energy? (C)

Standard(s)

Connecticut Core Standards / Content Standards

NGSS: Disciplinary Core Ideas

NGSS: Grade 5

PS2: Motion and Stability: Forces and Interactions

PS2.B: Types of Interactions

The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center. (5-PS2-1)

PS3: Energy

PS3.D: Energy in Chemical Processes and Everyday Life

The energy released [from] food was once energy from the sun that was captured by plants in the chemical process that forms plant matter (from air and water). (5-PS3-1)

NGSS: 6-8

PS2: Motion and Stability: Forces and Interactions

PS2.A: Forces and Motion

The motion of an object is determined by the sum of the forces acting on it; if the total force on the object is not zero, its motion will change. The greater the mass of the object, the greater the force needed to achieve the same change in motion. For any given object, a larger force causes a larger change in motion. (MS-PS2-2)

PS3: Energy

PS3.A: Definitions of Energy

Motion energy is properly called kinetic energy; it is proportional to the mass of the moving object and grows with the square of its speed. (MS-PS3-1)

A system of objects may also contain stored (potential) energy, depending on their relative positions. (MS-PS3-2)

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Access the interactive version of the NGSS [here](#)

Critical Content & Skills


What students must **KNOW and be able to DO**

Students must know and/or be able to:

- understand that there are many different types of energy.
- distinguish *gravitational potential energy* from *kinetic energy*.
- know that energy is always *conserved*, but it can be *transformed* into other types of energy.
- work collaboratively to construct Lux Blox tracks that can carry a ping pong ball.
- adjust track variables (e.g. ramp height and slope, turns, track width, amount of friction) to effectively manage the transformation of potential energy into kinetic energy.
- use an iPad to record photos and video.
- use the markup tools to annotate iPad photos in order to demonstrate their understanding of energy concepts.


Core Learning Activities

See document linked below for unit plan and activities.

 [6th - Lux Blox Slower Coasters](#)

Assessments


Summative: Group Project

 [2022 Collaborative Group Work Rubric - Lux Blox Slower Coasters \(COVID-6th\)](#)

Annotated iPad Photos

Summative: Other Visual Assessments

Students annotate photos of their final track design to demonstrate their knowledge of unit concepts.

 [Lux Coaster photo markup example.jpeg](#)

Resources

Professional & Student

See folder linked below for unit resources.

 [Unit 4 \(6th\) - Lux Blox Slower Coasters](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

Interdisciplinary Connections

STEM connections to the regular classroom:

- Science - supports instruction for the following Performance Expectations:

Written Performance

- Grade 5: 5-PS2-1, 5-PS3-1,
- Grade 6: MS-PS3-2, MS-PS3-5



Unit Planner: Water Cycle Investigations Integrated STEM Gr. 6

Monday, March 28, 2022, 9:27AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 24 - Week 32

Last Updated: Thursday, March 24, 2022 by
Peter Bernson

Water Cycle Investigations

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

[Unit Web Template \(Optional\)](#)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Systems and System Models

Concepts: systems, modeling, investigation design, energy, matter, viral spread

G

Generalizations / Enduring Understandings

1. Energy and matter flow into, out of, and within systems.
2. Designing investigations enables the use of models to help explain, understand, and predict phenomena in order to solve real world problems.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

1. Systems have inputs, processes and outputs allowing energy and matter flows within them.

- What is a system? (F)
- What are the components of the water cycle? (F)
- How can the processes within a system be influenced? (C)

2. Designing investigations enables the use of models to help explain, understand, and predict phenomena in order to solve real world problems.

- What is a control? (F)
- What is a variable? (F)
- Why do variables need to be controlled in an investigation? (C)
- How does modeling a system's components help to understand the entire system? (C)
- What limitations do models have? (C)
- How do you know when the data generated by models is reliable enough to apply in real world situations? (P)

Standard(s)

Connecticut Core Standards / Content Standards

NGSS: Science and Engineering Practices

NGSS: 6-8

Practice 2. Developing and using models

Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.

Develop or modify a model—based on evidence – to match what happens if a variable or component of a system

is changed.

Develop and/or revise a model to show the relationships among variables, including those that are not observable but predict observable phenomena.

Practice 3. Planning and carrying out investigations

Planning and carrying out investigations in 6-8 builds on K-5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or solutions.

Plan an investigation individually and collaboratively, and in the design: identify independent and dependent variables and controls, what tools are needed to do the gathering, how measurements will be recorded, and how many data are needed to support a claim.

Collect data to produce data to serve as the basis for evidence to answer scientific questions or test design solutions under a range of conditions.

NGSS: Crosscutting Concepts

NGSS: 6-8

Crosscutting Statements

4. Systems and System Models – A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems.

Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems.

Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy, matter, and information flows within systems.

Models are limited in that they only represent certain aspects of the system under study.

NGSS: Disciplinary Core Ideas

NGSS: Grade 5

ESS2: Earth's Systems

ESS2.A: Earth Materials and Systems

Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to determine patterns of weather. (5-ESS2-1)

PS1: Matter and Its Interactions

PS1.A: Structure and Properties of Matter

Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means. A model shows that gases are made from matter particles that are too small to see and are moving freely around in space can explain many observations, including the inflation and shape of a balloon; the effects of air on larger particles or objects. (5-PS1-1)

NGSS: 6-8

ESS2: Earth's Systems

ESS2.C: The Roles of Water in Earth's Surface Processes

Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land. (MS-ESS2-4)

ETS1: Engineering Design

ETS1.B: Developing Possible Solutions

Models of all kinds are important for testing solutions. (MS-ETS1-4)

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Access the interactive version of the NGSS [here](#)

Critical Content & Skills

*What students must **KNOW** and be able to **DO***

Students must know and/or be able to:

- trace water as it cycles through Earth's atmosphere in different phases as a gas, liquid, or solid.
- recognize that water vapor is present in the air even though we cannot see it.
- understand that when more water vapor is present in the air, viral spread is lessened.
- work collaboratively to design an investigation to demonstrate that invisible water vapor is present in air.
- use PocketLab sensors to measure multiple conditions within a system (e.g. temperature, relative humidity, dew point).
- test variables that affect the amount of water vapor in a closed system.
- use scientific reasoning to support claims based on evidence from their investigation.
- design a system by manipulating variables to achieve a target humidity that could limit the spread of viruses.

Core Learning Activities

See document linked below for unit plan and activities.



[Unit 5 \(6th\) - Water Cycle Investigations Unit Plan](#)



[6th - Water Cycle/PocketLab intro](#)



[Water Vapor Test Brainstorming TEMPLATE](#)



[Water Vapor Test Recording Sheet](#)

Assessments

Wet Jeans Google Form

Formative: Other written assessments

Students complete a Google Form to establish their prior conceptions about the evaporation process and to provide a basis for argumentation.



[Wet Jeans](#)

Group Water Cycle Models

Formative: Other Visual Assessments

Groups of 3-4 students use Google Slides design tools create models of the water cycle to develop and share their understanding of unit content (see sample, attached).



[10 Sample Wet Jeans/Water Cycle Models](#)

Investigation Plan

Formative: Lab Assignment

Students design an investigation using PocketLab sensors to test a variable of their choice using a water cycle model.



[Water Vapor Tests - Independent Designs Recording Sheet](#)

Resources

Professional & Student

See folder linked below for unit resources.



[Unit 5 \(6th\) - Water Cycle Investigations](#)



[Wet Jeans Probe Data](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

[Written Performance](#)

Interdisciplinary Connections

STEM connections to the regular classroom:

- Science - supports instruction for following Performance Expectations: [5-ESS2-1](#), [5-PS1-1](#), [MS-ESS2-4](#)



Unit Planner: Edison Robot Mazes Integrated STEM Gr. 6

Monday, March 28, 2022, 9:28AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 33 - Week 36

Last Updated: Thursday, March 24, 2022 by
Peter Bernson

Edison Robot Mazes

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

Unit Web Template (Optional)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Human/Machine Interaction

Concepts: robots, programmers, procedural programming, autonomous programming, problem solving

G

Generalizations / Enduring Understandings

1. Robot programmers employ procedural and/or autonomous programming methods to solve a given problem.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

1. Robot programmers employ procedural and/or autonomous programming methods to solve a given problem.

- What is a robot? (F)
- What is procedural programming? (F)
- What is autonomous programming? (F)
- How does programming a robot to follow a predetermined path differ from programming one to navigate autonomously? (C)
- Is one type of programming best? (P)

Standard(s)

Connecticut Core Standards / Content Standards

ISTE: Educational Technology (2016)

ISTE: All Grades

5. Computational Thinker

Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. Students:

c. break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

6. Creative Communicator

Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals. Students:

a. choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.

7. Global Collaborator

Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally. Students:

c. contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

2016 ISTE Standards

Students 2016 ISTE Standards for Students, ©2016, ISTE® (International Society for Technology in Education), iste.org. All rights reserved.

Critical Content & Skills

What students must **KNOW and be able to DO**

Students must know and/or be able to:


- recognize that machines can be programmed in different ways using different approaches.
- use Scratch-based block programming language to procedurally guide a robot.
- control a robot drive motors to navigate a maze step by step by:
 - manipulating both time and distance variables to control robot's forward motion.
 - manipulating angle measure variables to control robot's spin.

OR

- program robot drive motors and sensors to navigate a maze autonomously.

Core Learning Activities

See linked document below for unit plan.


 [6th - Edison Robot Mazes Unit Plan](#)

 [6th - Edison Robot Mazes](#)

Assessments

Robot Maze Rubric

Summative: Technology Project

 [Collaborative Group Work Rubric - Edison Mazes](#)

Resources

Professional & Student

See linked folder below for unit resources.

 [\(6th\) - Edison Robot Mazes](#)

[Introductory Edison Maze Activity](#)

[Edison Mini-Maze Challenge](#)

[Edison Autonomous Maze Challenge Video](#)

[Autonomous Robotics Maze Challenge #2 Video](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

[Written Performance](#)

Interdisciplinary Connections

STEM connections to other classrooms:

- Math - use metric units of measure, estimate angles
- Music - program a song robot can play while navigating maze
- Technology - use Python- and Scratch-based programming platforms



Unit Planner: KEVA Cantilever Challenge Integrated STEM Gr. 6

Monday, March 28, 2022, 9:29AM

Reed Intermediate School / 2021-2022 / Grade 6 / Science / Integrated
STEM Gr. 6 / Week 37 - Week 38

Last Updated: Thursday, March 24, 2022 by
Peter Bernson

KEVA Cantilever Challenge

Bernson, Peter; Fonovic, Jessica; Stentiford, Todd

- [Unit Planner](#)
- [Lesson Planner](#)

Concept-Based Unit Development Graphic Organizer (Download)

Unit Web Template (Optional)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Systems

Concepts: structures/substructures, systems/subsystems, properties of materials

G

Generalizations / Enduring Understandings

1. Structures and their substructures form systems that can be modeled and designed to meet specific criteria.
2. The properties of materials used in a structure determine their utility
3. Structures form complex systems and subsystems

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

- What is a cantilever? (F)
- How are cantilevers useful in solving design problems? (C)
- What properties of materials determine their suitability for use in building cantilevers? (C)
- How can a model of a system or subsystem help to meet engineering design criteria? (C)
- Is there a mathematical relationship between a KEVA cantilever's beam length and the mass needed to anchor it? (P)
- Are cantilevered structures less safe than fully supported ones? (P)

Standard(s)

Connecticut Core Standards / Content Standards

NGSS: Science and Engineering Practices

NGSS: 6-8

Practice 2. Developing and using models

Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.

Develop or modify a model—based on evidence – to match what happens if a variable or component of a system is changed.

Develop and/or use a model to generate data to test ideas about phenomena in natural or designed systems, including those representing inputs and outputs, and those at unobservable scales.

NGSS: Crosscutting Concepts

NGSS: 6-8

Crosscutting Statements

4. Systems and System Models – A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems.

Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems.

Models are limited in that they only represent certain aspects of the system under study.

NGSS: Disciplinary Core Ideas

NGSS: 6-8

ETS1: Engineering Design

ETS1.B: Developing Possible Solutions

A solution needs to be tested, and then modified on the basis of the test results, in order to improve it. (MS-ETS1-4) (secondary to MS-PS1-6)

There are systematic processes for evaluating solutions with respect to how well they meet criteria and constraints of a problem. MS-ETS1-2), (MS-ETS1-3) (secondary to MS-PS3-3) (secondary to MS-LS2-5)

Models of all kinds are important for testing solutions. (MS-ETS1-4)

ETS1.C: Optimizing the Design Solution

The iterative process of testing the most promising solutions and modifying what is proposed on the basis of the test results leads to greater refinement and ultimately to an optimal solution. (MSETS1-4) (secondary to MS-PS1-6)

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Critical Content & Skills

*What students must **KNOW and be able to DO***

Students must know and/or be able to:

- identify and build a cantilever.
- recognize how cantilevers can be useful in building.
- understand how structures and their substructures form a system.
- model a system or subsystems to help to meet design goals.
- complete a video lesson/formative quiz introduction to cantilevers.
- use the Engineering Design Process to build multiple iterations of a design in order to maximize cantilever length.

Core Learning Activities

See linked document below for unit plan.

[Unit 7 \(6th\) - KEVA Cantilever Challenge Unit Plan](#)

[6th - KEVA Cantilever Challenge](#)

Assessments

KEVA Cantilevers

Formative: Group Project

Anecdotal observation of student collaborative design and testing of KEVA plank cantilevered structures.

EdPuzzle Cantilever Video/Assessment

Formative: Other Visual Assessments

[EdPuzzle Link](#)

Resources

Professional & Student

See linked folder below for unit resources.

[6th - KEVA Cantilevers](#)

Student Learning Expectation & 21st Century Skills

[Information Literacy](#)

[Critical Thinking](#)

[Spoken Communication](#)

[Written Performance](#)

Interdisciplinary Connections

-

Hawley HVAC - Planning

Year End

4 early release days at end of the 2021-22 school year

June 13,14, 15 and 16

(packing up classrooms, moving, impacts 4 schools, including preschool)

June 17 and beyond - district moving days (Facilities Director, staff, and potential moving company)

Summer school at Reed is already accounted for regarding classroom setup

August

August 24, 25 (2 full days for staff at SHES, Hawley, Reed, and HOM (preschool only) to unpack and set up classrooms. Other buildings can use time as needed and at their discretion.

Faculty Meetings can be held on one of the two days above (August 24, 25) but no PD (No PD for all staff or for just those impacted by the move. Other buildings should be able to plan as needed.)

August 26 - Elementary Walkthroughs

Other buildings to use time as needed and at their discretion.

Hawley @ SHES - Gr. K-1 am walkthrough

Hawley @ Reed - Gr. 2, 3 and 4 - pm walkthrough

August 29

1st day with students and Convocation (afternoon)

1:00-3:00 p.m. - Lunch at NHS and Convocation (Lunch 1-2, Convocation 2-3)

August 30 and 31

PD - ½ days

September 23 - ½ Day PD

November (Election Day), December 14

No School - Full PD Days in calendar

Other Considerations

- All teachers will receive adequate boxes and other shipping materials (labels, etc.) to ease the move.
- Support will be provided to ensure classroom teachers have what they need to restore their rooms in August, as appropriate.

**NON-RENEWAL LIST
2021-22**

Non-Renewals for Budgetary Reasons

none

**Non-Renewals as a Matter of Protocol
One Year Contracted Positions/Long-term Substitutes**

<u>HAW/HOM</u>	Monica Crone – LT sub
<u>Sandy Hook</u>	Nicole Weintraub – 1 year contract
<u>High School</u>	Amy Smith – 1 year contract

**Board of Education
Newtown, Connecticut**

Minutes of the Board of Education meeting held on April 5, 2022 at 7:00 p.m. in the Council Chambers, 3 Primrose Street.

D. Zukowski, Chair	L. Rodrigue
J. Vouros, Vice Chair	A. Uberti
D. Ramsey, Secretary	T. Vadas
R. Harriman	11 Staff
D. Cruson	13 Public
J. Kuzma	1 Press
J. Larkin	
C. Savo	
M. Irving	

Ms. Zukowski called the meeting to order at 7:00 p.m.

Item 1 – Pledge of Allegiance

Item 2 – Consent Agenda

MOTION: Mr. Ramsey moved that the Board of Education approve the consent agenda which includes the donation to Newtown High School and the correspondence report. Mr. Cruson seconded. Motion passes unanimously.

Item 3 – Public Participation

Carrie Grummons, 5 Black Walnut Drive, referred to the equal opportunity policy with a line struck through the sentence “The Board directs the administration to set as a goal the recruitment, selection, and employment of qualified people among racial and ethnic minority groups” which is against what the previous board passed in the DEI policy last term. She spoke about racism and bullying.

Ms. Zukowski clarified that initially there was one policy for affirmative action and minority recruitment but we felt minority recruitment was too important which is why we separated them into two policies.

Mrs. Harriman asked if other Board members would be allowed to provide clarification during public comment or was it just a privilege of the Board chair.

Ms. Zukowski said generally it is a privilege for the chair, which is a rare event, but other Board members can respond with clarifications.

Wendy Leon Gambetta, 19 Saw Mill Ridge Road, spoke about the importance of having diversity in teachers.

Danielle Lozer, 1 Grays Plain Road, spoke about racism, the lack of minority teachers, and asked to make minority recruitment a priority.

Item 4 – Reports

Chair Report Ms. Zukowski noted that the Legislative Council Education Committee recommended a \$557,195 reduction in the Board of Education budget for next year. It will be presented to the full Legislative Council tomorrow for a vote.

Mrs. Hariman asked for clarification on the reduction and where we were going to find them.

Ms. Zukowski said the cut is based on a number of elementary teachers we are asking for because of the additional 84 students. They took \$170,000 from facilities and was in support of keeping money for students in the classroom.

Mr. Vouros addressed the parents to make sure they attended the Legislative Council meeting tomorrow night so voices can be heard. We cannot do this without you.

Superintendent's Report: Dr. Rodrigue gave an update on COVID and the optional testing program. 118 were tested with two positive cases. There have been 10 cases at the high school in the last two days and feels we are in a good place. She spoke about the staffing report which included two teacher retirements.

Committee Reports:

Mr. Vouros reported the Curriculum and Instruction Subcommittee met regarding the presentations tonight.

Mr. Cruson said the Policy Committee met last Wednesday and finished the retaliation and whistle blowing policies as well as a few others.

Mrs. Harriman noted that Mr. Johnson reached out with agenda items so the DEI Committee will meet after break.

Mrs. Kuzma said the Social Emotional Health and Wellness Committee met March 25 and included Anne Dalton. They discussed furthering partnerships with other groups in the community. Mrs. Dalton added a health and wellness page on the website.

Student Representatives:

Ms. Savo reported on various high school updates.

Mr. Irving said the Winterguard championships were held Saturday and we received a couple of titles. He also provided some high school highlights and that the district art show was in the Municipal Center .

Item 5 – Presentations

i-Ready Data Report:

Dr. Frank Purcaro presented the i-Ready assessment data for grades 2 through 8 in ELA and math.

Mrs. Larkin noted that some grades were affected harder than others and asked if we had a plan to look at what they can do for those specific grades.

Dr. Purcaro said we did more research into that data and are addressing that.

Mrs. Kuzma asked how we compare with other towns

Dr. Purcaro said we will compare spring testing with other districts. On Smarter Balance we were in the high sixties for math and low to mid-seventies in reading.

Mrs. Harriman asked if our results were typical and if we are doing great or average in our growth.

Dr. Purcaro stated that i-Ready indicates we have had a lot of growth.

Mrs. Harriman was concerned about students and teachers getting to where we were before the pandemic.

Mr. Ramsey asked if there was a vision or plan for teachers to explore other methods of teaching math.

Dr. Purcaro said Bridges is pushing pedagogy for teacher to access math in a different way. i-Ready has taken some of the cloudiness and targets areas for some students.

Proposed Changes to Math Pathways:

Anne Uberti reported on possible math changes and was joined by Jessica Fonovic and Bonnie Hart.

Mr. Ramsey was concerned about students who have latent math ability and could slip through the cracks.

Mrs. Uberti felt it was unlikely that anyone would slip through the cracks. We also try to assess new students moving in.

Mr. Cruson was concerned about pushing identification and afraid that students who are not standouts to the teachers won't get what they need

Mrs. Fonovic spoke about the placement process.

Ms. Zukowski asked how much of an advantage self-directed learners have over students who need more guidance. Also, in some pathways you skip part of the curriculum. Some students have advantages at home for extra help. She made a recommendation that this goes back to Curriculum and Instruction in terms of equity and in terms of cognitive processing for fifth graders.

Mrs. Hart said a benefit of Covid was that all students have Chromebooks, I-Excel and free online resources to help.

Ms. Zukowski felt it would make sense to have more conversations and feels the Board should vote on this.

Mrs. Uberti stated that the entire math committee and principals support this change. It's difficult to address the equity issue. She has a concern about delaying the change if it's the right thing to do. She suggested taking the next two weeks to get the questions answered and then come together for a vote.

Mrs. Larkin feels that more data is needed to see what is driving this and we should vote on it.

Mr. Ramsey asked who was on the math committee.

Mrs. Uberti said the math committee consisted of math specialists from the elementary, Reed and middle school, the high school math department chair, two high school math teachers, Jim Ross and a six plus teacher at Reed.

Integrated STEM Curriculum for Grade 5 and 6:

Peter Bernsen presented the grades 5 and 6 Integrated STEM curriculum.

Item 6 – Old Business

MOTION: Mr. Ramsey moved that the Board of Education approve the Computer Integration Curriculum for grades 7 and 8. Mr. Cruson seconded. Motion passes unanimously

MOTION: Mr. Ramsey moved that the Board of Education approve the Technology Education Curriculum for grades 7 and 8. Mr. Cruson seconded. Motion passes unanimously.

MOTION: Mr. Ramsey moved that the Board of Education approve Policy 4111.1 / 4211.1 Equal Employment Opportunity (Affirmative Action). Mr. Cruson seconded.

Mr. Cruson said this policy has been through the committee multiple times. Mr. Johnson and Dr. Rodrigue brought this to our attention to be split into two policies. Motion passes unanimously.

MOTION: Mr. Ramsey moved that the Board of Education approve Policy 4111.3 / 4211.3 Plan for Minority Recruitment and Selection. Mr. Cruson seconded.

Mrs. Harriman wanted to be sure Mr. Johnson reviewed this policy, to which Mr. Cruson said he was part of all discussions. Motion passes unanimously.

MOTION: Mr. Ramsey moved that the Board of Education rescind Policy 4118.239 / 4218.239 required COVID-19 Vaccinations. Mr. Cruson seconded. Motion passes unanimously. Ms. Zukowski moved to postpone the Hawley update to two weeks from today. Mr. Cruson seconded. Motion passes unanimously.

Item 7 – New Business

Newtown Middle School Moving Up and Newtown High School Graduation Dates:

MOTION: Mr. Ramsey moved that the Board of Education approve June 14 for the Newtown Middle School Moving-up Ceremony and June 15 as the Newtown High School Graduation date with June 16 as the rain date. Mrs. Harriman seconded. Motion passes unanimously.

Board of Education District Highlights:

MOTION: Mr. Ramsey moved that the Board of Education approve the Board of Education District Highlights Volume 2 Issue 2. Mr. Cruson seconded. Motion passes unanimously.

Minutes of March 15, 2022:

MOTION: Mr. Ramsey moved that the Board of Education approve the minutes of March 15, 2022. Mr. Cruson seconded. Motion passes unanimously.

Minutes of March 24, 2022:

MOTION: Mr. Ramsey moved that the Board of Education approve the minutes of March 24, 2022. Mrs. Harriman seconded.

MOTION: Mr. Cruson moved to amend the motion to indicate that he was not at this meeting. Mr. Vouros seconded. Motion passes unanimously.

Vote on main motion: 6 ayes, 1 abstained (Mr. Cruson) Motion passes.

Item 8 – Public Participation

Tony Keating, 7 Oak Ridge Drive, spoke about people in Newtown constantly being accused of being racist or bigoted and also about white males trying to enter college.

Stephanie Barnes, 40 Black Bridge Road, asked if there was information available at the high school regarding help for addiction with groups like Narcotics Anonymous and Alcoholics Anonymous.

Nerlande Foote, 14 Bears Hill Road, spoke about racism and that DEI includes all.

Konrad Miller, 72 Forest Drive, spoke about bullying and racism.

Jessica Lasko, 103 Brushy Hill Road, thanked the Board about the math pathways. Regarding the Superintendent search she asked the Board to create a hiring committee with teachers, administrators and staff. We need a diverse committee.

MOTION: Mr. Ramsey moved to adjourn. Mrs. Harriman seconded. Motion passes unanimously.

Item 9 – Adjournment

The meeting adjourned at 10:07 p.m.

Respectfully submitted:



Donald Ramsey
Secretary