

INTERNAL MONITORING REPORT

November 15, 2023

Policy: **1.1 Schooling**
Policy Category: **Ends**
Period Monitored: **2022-23 School Year**

This is my monitoring report on the Board of Education's Ends Policy 1.1 Schooling. This report is presented in accordance with the Board's monitoring schedule. I certify that the information is true and complete.

Chris Gdowski, Superintendent
November 9, 2023

POLICY WORDING:

Students enrolled in Adams 12 Five Star Schools shall have the knowledge, learning and life skills necessary to prepare them for further learning in the next grade level or life transition.

- a. Students shall build and demonstrate strong content knowledge in their required and selected courses.*
- b. Students will have the ability to communicate their knowledge through:*
 - *writing and speaking*
 - *the use of technical and non-technical means*
 - *and in response to varying demands of audience, task, purpose and discipline*
- c. Students will have the opportunity and expectation to demonstrate comprehension and critical analysis skills.*
- d. Students in all subgroups will show appropriate academic growth each year.*

Life Skills

Students shall have opportunities to develop and demonstrate independence, self-directed learning, creativity, problem-solving, adaptability, critical thinking, perseverance, global and cultural understanding and effective communication skills in order to successfully achieve their college, career and life aspirations

INTERPRETATION:

I interpret the following language:

a. Students shall build and demonstrate strong content knowledge in their required and selected courses.

to mean:

Evidence shall be presented to demonstrate that students demonstrate increased achievement over time on available State summative and/or District interim assessments.

CONTEXT RELATED TO ACHIEVEMENT AND GROWTH DATA REPORTED:

Due to the cancellation of state and district testing in the spring of 2020, no data are available for that year. Caution should be used when interpreting state assessment data from the spring of 2021 because fewer grade levels were tested and parent opt out rates were substantially higher than in the spring of 2019.

ACHIEVEMENT DATA:

Percentage of Students Scoring Above the 50th Percentile on NWEA MAP Assessments

School Level	Content Area	Spring 2019	Spring 2021	Spring 2022	Spring 2023	Change 2022 to 2023
Elementary	Reading	48.4%	47.7%	51.7%	53.6%	1.9%
	Math	46.7%	41.4%	49.1%	53.0%	3.9%
Middle	Reading	51.7%	54.1%	49.4%	51.4%	2.0%
	Math	48.2%	50.9%	44.6%	45.3%	0.7%

Percentage of Students Scoring Met and Exceeded on CMAS Assessments

School Level	Content Area	Spring 2019	Spring 2021*	Spring 2022	Spring 2023	Change 2022 to 2023
Elementary	English language arts	44.8%	40.6%	41.3%	42.2%	0.9%
	Math	34.7%	29.4%	33.7%	35.9%	2.2%
Middle	English language arts	44.6%	42.7%	39.8%	39.4%	-0.4%
	Math	35.3%	28.7%	27.6%	27.6%	0.0%

*Only half the normal number of grade levels were tested and opt outs were much higher than in previous years

Percentage of Students Meeting College Readiness Benchmarks (%CR) on PSAT and SAT

Test	Content Area	Spring 2019	Spring 2021	Spring 2022	Spring 2023	Change 2022 to 2023
PSAT 9	Evidence-based Reading & Writing	66.2%	65.3%	63.3%	63.7%	0.4%
	Math	53.0%	44.4%	44.5%	51.3%	6.8%
PSAT 10	Evidence-based Reading & Writing	62.7%	65.5%	67.4%	66.3%	-1.1%
	Math	41.1%	38.8%	45.0%	42.6%	-2.4%
SAT	Evidence-based Reading & Writing	54.1%	56.3%	54.7%	58.8%	4.1%
	Math	36.9%	36.0%	37.3%	39.7%	2.4%

Percentage of Students Scoring Below the Significant Reading Deficiency (SRD) Cut - Spring

Grade	Spring 2019	Spring 2021	Spring 2022	Spring 2023	Change 2022-23
K	14.8%	20.5%	16.6%	15.2%	-1.4%
1	23.4%	27.9%	24.9%	27.2%	2.3%
2	24.9%	29.5%	25.2%	26.6%	1.4%
3	25.9%	29.8%	26.9%	28.0%	1.1%
K-3	22.4%	27.2%	23.4%	24.4%	1.0%

COMPLIANCE STATEMENT:

The District's performance during the monitoring period has partially complied with the standard. While a number of achievement metrics have not returned to pre-pandemic levels, 57.8% (11 of 19) achievement metrics improved compared to the 2021-22 school year. It is anticipated that the District's performance will comply with the standard for the 2023-24 school year given ongoing UIP improvement efforts and a renewed focus on progress monitoring and sound instruction aligned to grade-level standards.

INTERPRETATION:

I interpret the following language:

b. Students will have the ability to communicate their knowledge through:

- *writing and speaking*
- *the use of technical and non-technical means*
- *and in response to varying demands of audience, task, purpose and discipline*

c. Students will have the opportunity and expectation to demonstrate comprehension and critical analysis skills.

to mean:

Evidence shall be presented to demonstrate that the scope and sequence of the Adams 12 Guaranteed and Viable Curriculum (GVC) in all core content areas requires that students demonstrate the ability to communicate their knowledge through writing and speaking, the use of technical and non-technical means, and in response to varying demands of audience, task, purpose and discipline as well as to demonstrate comprehension and critical analysis skills.

GVC DATA REPORTED:

The Colorado Department of Education (CDE) adopted the Colorado Academic Standards (CAS), which provide a road map to help ensure students are successful in college, careers, and life. The Adams 12 Learning Services Department developed a Guaranteed and Viable Curriculum (GVC) for each content area aligned to the CAS. The GVC provides a well-articulated structure for teachers to follow to enable them to provide aligned, rigorous instruction to all students. Each GVC includes standards that require cognitively complex content designed to prepare students for postsecondary success. The following are examples of content standards, links to the GVC, and cognitively demanding tasks required of Adams 12 students.

STANDARDS ANALYSIS DATA REPORTED:

The Colorado Department of Education (CDE) adopted the Colorado Academic Standards (CAS), which provide a road map to help ensure students are successful in college, careers, and life. The Adams 12 Learning Services Department developed a Guaranteed and Viable Curriculum (GVC) for each content area aligned to the CAS. The GVC provides a well-articulated structure for teachers to follow to enable them to provide aligned,

rigorous instruction to all students. Each GVC includes standards that require cognitively complex content designed to prepare students for postsecondary success. The following are examples of content standards, links to the GVC, and cognitively demanding tasks required of Adams 12 students.

Reading – Reading Literary Text – Standard RL.3

Grade Level	Standard	Unit(s) of Study
K	With prompting and support, name the author and illustrator of a story and define the role of each in telling the story.	Benchmark Advance c2022: Unit 2 unit 3, Unit 4, unit 5, Unit 8, Unit 9
3	Describe characters in a story (e.g. their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.	Benchmark Advance c2022: Unit 2, Unit 6, Unit 7
5	Compare and contrast two or more characters, settings or events in a story or drama, drawing on specific details in the text (e.g. how characters interact).	Benchmark Advance c2022: Unit 2, Unit 6, Unit 8,
6	Describe how a particular story's or drama's plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution.	Unit 1: Authors as Mentors
9	Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme.	Unit 2: Literary Analysis
12	Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed).	Unit 3: Interpreting Shakespearean Drama

Grade 5

Standard RL 5.3 Compare and contrast two or more characters, settings or events in a story or drama, drawing on specific details in the text (e.g. how characters interact).

KUCs

- readers compare two or more story elements (character, setting, or events) by noticing details and patterns that are similar between the elements and then explaining how those similarities affect the character(s) and/or plot.
- readers contrast two or more story elements (character, setting, or events) by noticing details and patterns that diverge or are distinct from one another between the elements and then explaining how those differences affect the character(s) and/or plot.

Sample 5th grade prompt: (From *Apply Understanding* within mini lesson in BA resource)

In the excerpt “The Knotted Branch” by Joseph Bruchac, how is Saxso different from the “Bostoniaks” described in this story? What advantages do these differences give Saxso throughout the story? Cite specific evidence from the text to support your thinking

Grade 6

RL.6.3 Describe how a particular story's or drama's plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution.

KUCs

- readers describe how a plot unfolds in a series of episodes by identifying significant events, and explaining how they impact one another.
- readers describe how characters respond or change as a result of significant events in the plot by analyzing what characters feel, say, or do as the plot progresses, comparing/contrasting these responses to prior responses in the text and then interpreting what this reveals about the character's evolution.

Sample 6th Grade Prompt: Students describe how the narrator of “Tuesday of Another June” by Norma Fox Mazer responds and changes as a result of distinctive events that move the plot toward resolution.

Grade 9

RL.9.3 Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme.

- Readers determine which characters are complex by identifying character(s) with multiple desires or motivations that create conflict or tension for the character.
- Readers determine how a complex character develops over the course of the text by determining character motivation(s) at the start of the text and how their persona or the reader's perception of them changes through the text.
- Readers analyze how complex characters interact with other characters by using their knowledge of the character's motivations to interpret why the character acts or speaks as they do.
- Readers analyze how a complex character advances the plot by determining key events in a narrative and interpreting how the character's actions and motivations influence each of the events.
- Readers analyze how a complex character develops a theme by determining key experiences of the character, interpreting what the character comes to realize through these experiences, and then stating this realization as a central message.

Sample 9th grade prompt: How does the character of Mrs. Hale from Susan Glaspell's “[Trifles](#)” demonstrate conflicting motivations through her interactions with other characters in the play? Describe how her conflicting sense of duties to her home and herself both advance the plot and develop the theme.

Writing – Standard 3 – Narrative Writing

Grade Level	Standard	Unit(s) of Study
K	<p>Use a combination of drawing, dictating, and writing to compose to narrate a single event or several loosely linked events in the order in which they occurred, and provide a reaction to what happened.</p>	<p>Unit 1a:Readying For Narrative: Telling Our Stories Unit 1b:Launching Personal Narrative Unit 2a: Readying For Narrative: Telling Our Stories Unit 2b:Personal Narrative: Sequencing Unit 6a: Readying For Narrative: Telling Our Stories Unit 6b: Personal Narrative Zooming In</p>
3	<p>Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.</p> <ul style="list-style-type: none"> ● Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally. ● Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations. ● Use temporal words and phrases to signal event order. ● Provide a sense of closure. 	<p>Unit 1: :Launching Narrative Unit 5:Narrative Writing</p>
5	<p>Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.</p> <ul style="list-style-type: none"> ● Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally. ● Use narrative techniques, such as dialogue, description and pacing, to develop experiences and events or show the responses of characters to situations. ● Use a variety of transitional words, phrases, and clauses to manage the sequence of events. ● Provide a conclusion that follows from the narrated experiences or events. 	<p>Unit 1: Launching Workshop:l Narrative Writing Unit 6: Narrative Writing</p>

6	<p>Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.</p> <ul style="list-style-type: none"> ● engage and orient the reader by establishing a context and introducing a narrator and/or characters ● organize an event sequence that unfolds naturally and logically. ● use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. ● use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another. ● use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events. ● provide a conclusion that follows from the narrated experiences or events. 	<p>Unit 1: Authors as Mentors Unit 4: Analyzing Authors' Craft</p>
9	<p>Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.</p> <ul style="list-style-type: none"> ● engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events. ● use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. ● use a variety of techniques to sequence events so that they build on one another to create a coherent whole. ● use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters. ● provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative. 	<p>Unit 1: Analyzing & Developing Narratives</p>

12	<p>write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.</p> <ul style="list-style-type: none"> ● engage and orient the reader by setting out a problem, situation, or observation and its significance, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events. ● use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. ● use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense, growth, or resolution). ● use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters. ● provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative. 	Unit 1: Narrative Development
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Grade 5

Standards and substandards with KUCs

W.5.3 Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

W.5.3.a Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.

- writers use introductions to engage the reader in the text.

W.5.3.b Use narrative techniques, such as dialogue, description and pacing, to develop experiences and events or show the responses of characters to situations.

- writers use dialogue and description to show the thoughts, feelings and actions of characters.
- writers use pacing to affect the mood, tone and atmosphere of narratives.

W.5.3.c Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters.

- writers use concrete words and details to convey meaning.

W.5.3.d Provide a conclusion that follows from the narrated experiences or events.

- writers use conclusions to bring a sense of closure to a piece of writing.

Sample 5th grade narrative writing:

[Sample of student work for narrative:](#) This is a response from a 5th grade student from Centennial Elementary, Fall 2023, that meets expectations from the Adams 12 Units of Study.

Grade 6

W.6.3 Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.

- **W.6.3.a Engage and orient the reader by establishing a context and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.**
 - writers establish context by creating a relevant setting, clarifying what is happening, and establishing who is involved.
 - writers engage readers by thinking about what draws readers into a text.
 - writers orient readers by providing information that sets the stage and supports them in making meaning.
 - writers create event sequences that unfold naturally and logically by deciding how events connect to or impact subsequent aspects of the plot, and then retelling those events so that they make sense to the reader.
- **W.6.3.b Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters.**
 - writers select from a range of narrative techniques by choosing those that will create intended effects and best develop experiences, events, and/or characters.
 - writers use dialogue by including conversations that help to develop and reveal aspects of their characters.
 - writers adjust pacing by making decisions about structure (such as flashbacks or scene cuts) and the accumulation or omission of details.
- **W.6.3.c Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another.**
 - writers use a variety of transitions to help signal the sequence of events, and shifts in time or setting by considering the effects of different transitions and determining which transition will best create their intended effect.
- **W.6.3.d Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events.**
 - writers convey experiences and events by carefully selecting language that evokes the experiences of significant plot events in the story.
- **W.6.3.e Provide a conclusion that follows from the narrated experiences or events.**
 - writers use conclusions to bring a sense of closure to a piece of writing by crafting a section, paragraph or sentence that connects to the discussion and gives the reader a sense of finality.

Sample 6th grade prompt:

Sample Prompt: Write a narrative showing how a particular small moment during an experience affected one person.

Sample of Grade 6 Narratives: These narratives are from 6th grade students meeting expectations from the Adams 12 units of study.

- [ELA Grade 6 :Juvenioia](#)(Adams 12 student)
- [ELA Grade 6 :Lost in the Woods](#)(Adams 12 student)
- [ELA Grade 6 :The Swirl of Fright](#) (Adams 12 student)

Grade 9

W.9.3 Write narratives to develop real or imagined experiences or events using effective technique, **well-chosen** details, and well-structured event sequences.

W.9.3.a Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events.

- writers engage readers by thinking about what draws readers into a text.
- writers orient readers by providing information that establishes the basis of the narrative.
- writers establish a narrator's and/or character's point of view by introducing actions, dialogue, and word choice to create a perspective.
- writers create smooth progressions by deciding the intended effect of the plot on the reader and then providing details to demonstrate how each experience or event connects to or impacts subsequent aspects of the plot.

W.9.3.b Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters.

- writers select from a range of narrative techniques by choosing those that will create intended effects and best develop experiences, events, and/or characters.
- writers use dialogue by choosing which words expressed by characters best develop and reveal characterization.
- writers adjust pacing by using a variety of structural techniques (such as flashbacks or scene cuts) and the accumulation or omission of details.
- writers craft reflections by having a narrator or character remember and comment upon the significance of particular moments or experiences.
- writers craft multiple plot lines by establishing two or more plots that alternate between one another and either have characters that will come together before the end of the narrative or which will be shown to have a significant connection.

W.9.3.c Use a variety of techniques to sequence events so that they build on one another to create a coherent whole.

- writers use appropriate techniques to sequence events by considering the effects of different narrative structures (chronology, flashbacks, flash forwards, *in medias res*, etc.) and determining which structure will best create their intended effect.
- writers create a coherent whole by considering how each aspect of the narrative builds off of and/or complements the others.

W.9.3.d Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters.

- writers convey a vivid picture of experiences and events by carefully selecting details which reveal the action of the story.
- writers convey a vivid picture of the setting by carefully selecting details which reveal location, time, and/or mood, and establish its relevance.
- writers convey a vivid picture of characters by carefully selecting details which reveal, either directly or indirectly, each character's thoughts, words, actions and/or motivations.

W.9.3.e Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.

- writers bring a sense of closure by providing a resolution to the plot; having a character or narrator come to a realization; and/or having a character or narrator reflect on the impact of the experiences of the narrative.

Sample Grade 9 Narratives: These narratives are samples of 9th grade students meeting expectations from the Adams 12 units of study.

- [Grade 9 Narrative Sample 1](#)
- [Grade 9 Narrative Sample 2](#)
- [Grade 9 Narrative Sample 3](#)
- [Grade 9 Narrative Sample 4](#)
- [Grade 9 Narrative Sample 5](#)
- [Grade 9 Narrative Sample 6](#)
- [Grade 9 Narrative Sample 7](#)

Math - Practice Standard 7 - Look for and make use of structure

Mathematically proficient students look closely to discern a pattern or structure. They step back and look for properties embedded in multiple mathematical representations. Students can develop abilities to see expressions as both processes and objects, to chunk expressions into substructures, and to evaluate their next steps before automatically applying procedures.

School Level	Level Specific Language	Units
Elementary	Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property.	Math Practice Standard 7 is incorporated into all units of study in alignment with high quality tasks
Middle	Mathematically proficient middle school students look closely to discern a pattern or structure. They can step back for an overview and shift perspective. This may involve viewing complicated elements as being constructed of single objects with their own contextual meanings. Example: Students might describe their interpretation of the structure of an expression based on its individual elements—for instance, understanding $1.05a$ as an original value, a , plus 5% of that value, $0.05a$.	

High	<p>In high school, students look closely to discern a pattern or structure. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$ to create factors $(x + 2)(x + 7)$. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y. High school students use these patterns to create equivalent expressions, factor and solve equations, and compose functions, and transform figures.</p>	
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From Everyday Math:

Math Standards of Practice

Mathematical Processes and Practices

7. Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y .

SMP7 Look for and make use of structure.

GMP7.1 Look for mathematical structures such as categories, patterns, and properties.

GMP7.2 Use structures to solve problems and answer questions.

Math Grade 3 [Unit 3: Operations](#)

In this unit: children use place value to develop and practice strategies for addition and subtraction of 2- and 3-digit numbers. They represent multiplication using arrays, and use representations to develop strategies for solving multiplication facts.

Lesson 3.1: “What’s My Rule?”

Standards and Goals for Mathematical Process and Practice

MP7: Look for and make use of structures.

GMPT1: Look for mathematical structures such as categories, patterns, and properties.

GMPT2: Use structures to solve problems and answer questions.

SMPT: Look for and express regularity in repeated reasoning.

GMPT3: Create and justify rules, shortcuts, and generalizations.

1 Warm Up 5 min

Mental Math and Fluency

Have children write numbers in expanded form on their slates.

Leveled exercises:

- 58 50 + 8 136 100 + 30 + 6
- 807 800 + 7 or 800 + 0 + 7 760 700 + 60 or 700 + 60 + 0
- 1001 1000 + 1 or 1000 + 0 + 0 + 1 2030 2000 + 30 or 2000 + 0 + 30 + 0

2 Focus 45-50 min

Math Message

Some bacteria double in number every 20 minutes. Use this information to complete this table on your slate. **GMPT2**

Now	20 min later	Unit
8	16	bacteria
50	100	
200	400	
75	150	
150	300	

Reviewing "What's My Rule?" Tables

Math Masters, p. TA23

Math Message Follow-Up: Display a function machine and "What's My Rule?" table (Math Masters, page TA23). Remind children that they use a "What's My Rule?" table to keep track of how a function machine changes numbers:

- A number (the **input**) is dropped into the machine.
- The machine changes the number according to a **rule**.
- A new number (the **output**) comes out the other end.

Ask: What is the rule for the Math Message problem? **GMPT1** Multiply by 2 or double. How did you use this rule to determine the out numbers? **GMPT2** Sample answer: I multiplied the in numbers by 2.

Write the rule in the function machine and fill in the table with the first pair of numbers from the Math Message. Explain that numbers in the in column represent the number of bacteria now. Corresponding numbers in the out column represent the number of bacteria 20 minutes from now.

Review the answers to the Math Message problem by asking: If 50 is dropped into the function machine, what number will come out? **GMPT2** 100. Encourage children to think, "50 doubled is what number?" or "50 × 2 is what number?" Invite children to enter the appropriate numbers in the in and out columns in the display.

Academic Language Development Help children understand the term function as what something does or how it works. For example, show a pencil sharpener and ask: What is the function of this machine? What does it do? It sharpens pencils by taking off part of the wood. Extend to "What's My Rule?" tables by asking: What is the function of this machine? It takes numbers and doubles them to make new numbers.

Reviewing "What's My Rule?" Variations

Math Masters, p. TA24

Display each type of "What's My Rule?" problem on Math Masters, page TA24. (See margin.) As a class, discuss and solve each problem. Note that the "types" are to organize discussion only. Children do not need to learn or use these labels.

- **Type 1: Missing output numbers** Support children in applying a rule to each in number. **GMPT2** Think aloud and then have children verbalize the process: 13 goes in, I subtract 9, and 4 comes out.
- **Type 2: Missing input numbers** Help children determine and apply the inverse rule. **GMPT2** If 12 comes out, I think $\frac{12}{5} = 2.4$ or $12 \div 5 = 2.4$.
- **Type 3: Missing rule** Encourage children to look for patterns in the relationships between given pairs. Ask: Do the outputs increase or decrease? By how much? Could the new rule involve addition, subtraction, multiplication, or division? How do you know? **GMPT1** **GMPT2** Sample answer: I think the new rule involves multiplication because to get from 2 to 10 and from 3 to 15, I multiply by 5. Encourage children to think: 2 times what number is 10?
- **Type 4: Missing rule and missing in and out numbers** Guide children to find patterns in pairs of numbers to determine the rule and apply it to missing numbers. **GMPT1** **GMPT2** **GMPT3**

Encourage children to check their work by reading the number sentence formed by the in number, the rule, and the out number. For each problem type, have children suggest an additional in and out number pair that fits the rule. **GMPT1**

Math Masters, p. TA23

Math Masters, p. TA24

Type 1

Rule: Subtract 9

in	out
13	4
10	1
17	8
18	9

Type 2

Rule: Add 5

in	out
7	12
10	15
21	26
45	50

Type 3

Rule: Multiply by 5

in	out
2	10
3	15
4	20
5	25

Type 4

Rule: Subtract 20

in	out
45	25
30	10
100	80
52	32

Math Grade 8 [Unit 1: Equations](#)

Math Standards of Practice

In this unit:

- Students recognize the structures of equations that produce one, infinitely many, or no solution ([MP7: Look for and Make Use of Structure](#)).



Self-Assessment for Concepts & Skills

Solve each exercise. Then rate your understanding of the success criteria in your journal.

- 10. OPEN-ENDED** Write an equation with variables on both sides that has a single solution of -1 . Explain how to solve your equation.

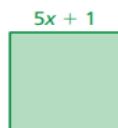
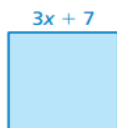
MP STRUCTURE Without solving, determine whether the equation has one solution, no solution, or infinitely many solutions. Justify your answer.

11. $3(x - 1) = -3$ **12.** $6x + 6 = 6(x + 1)$ **13.** $z + 1 = z + 6$

SOLVING AN EQUATION Solve the equation. Check your solution, if possible.

14. $-7x = x + 24$ **15.** $8(3 - z) = 4z$ **16.** $2(t - 3) = 2t - 6$

- 17. WRITING AND SOLVING AN EQUATION** The squares are identical. What is the area of each square?



Integrated Math 3: Rational Functions - Recognizing key features of rational functions

- After working with partners to match the graphs in Exploration 1 with the functions, students should be identifying the structures within a rational function that create key features and be able to apply it to the general function in **Communicate Your Answer** #3.

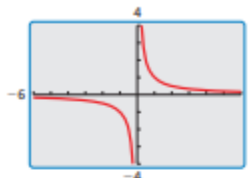
6.2 Graphing Rational Functions

Essential Question What are some of the characteristics of the graph of a rational function?

The parent function for rational functions with a linear numerator and a linear denominator is

$$f(x) = \frac{1}{x}. \quad \text{Parent function}$$

The graph of this function, shown at the right, is a *hyperbola*.



EXPLORATION 1 Identifying Graphs of Rational Functions

Work with a partner. Each function is a transformation of the graph of the parent function $f(x) = \frac{1}{x}$. Match the function with its graph. Explain your reasoning. Then describe the transformation.

a. $g(x) = \frac{1}{x-1}$

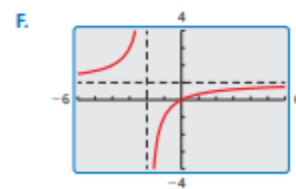
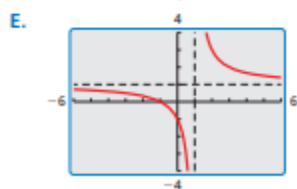
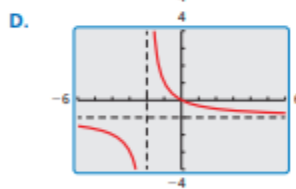
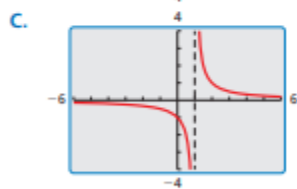
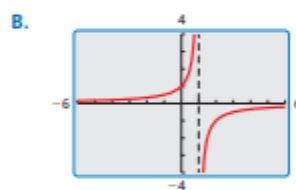
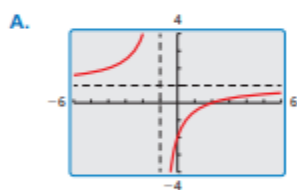
b. $g(x) = \frac{-1}{x-1}$

c. $g(x) = \frac{x+1}{x-1}$

d. $g(x) = \frac{x-2}{x+1}$

e. $g(x) = \frac{x}{x+2}$

f. $g(x) = \frac{-x}{x+2}$



LOOKING FOR STRUCTURE

To be proficient in math, you need to look closely to discern a pattern or structure.

Communicate Your Answer

- What are some of the characteristics of the graph of a rational function?
- Determine the intercepts, asymptotes, domain, and range of the rational function $g(x) = \frac{x-a}{x-b}$.

Science - NGSS Disciplinary Core Ideas - ESS1.B: Earth & The Solar System

General Description: The planet Earth is a tiny part of a vast universe that has developed over a huge expanse of time. Comprehension of these patterns can be used to explain many Earth phenomena, such as day and night, seasons, tides, and phases of the moon. The solar system consists of the sun and a collection of objects of varying sizes and conditions—including planets and their moons—that are held in orbit around the sun by its gravitational pull on them. This system appears to have formed from a disk of dust and gas, drawn together by gravity.

Earth and the moon, sun, and planets have predictable patterns of movement. These patterns, which are explainable by gravitational forces and conservation laws, in turn explain many large-scale phenomena observed on Earth. Planetary motions around the sun can be predicted using Kepler's three empirical laws, which can be explained based on Newton's theory of gravity. These orbits may also change somewhat due to the gravitational effects from, or collisions with, other bodies. Gradual changes in the shape of Earth's orbit around the sun (over hundreds of thousands of years), together with the tilt of the planet's spin axis (or axis of rotation), have altered the intensity and distribution of sunlight falling on Earth. These phenomena cause cycles of climate change, including the relatively recent cycles of ice ages.

Gravity holds Earth in orbit around the sun, and it holds the moon in orbit around Earth. The pulls of gravity from the sun and the moon cause the patterns of ocean tides. The moon's and sun's positions relative to Earth cause lunar and solar eclipses to occur. The moon's monthly orbit around Earth, the relative positions of the sun, the moon, and the observer and the fact that it shines by reflected sunlight explain the observed phases of the moon.

Even though Earth's orbit is very nearly circular, the intensity of sunlight falling on a given location on the planet's surface changes as it orbits around the sun. Earth's spin axis is tilted relative to the plane of its orbit, and the seasons are a result of that tilt. The intensity of sunlight striking Earth's surface is greatest at the equator. Seasonal variations in that intensity are greatest at the poles.

Grade Level	Level Specific Language	Units
K-2	Patterns of movement of the sun, moon, and stars as seen from Earth can be observed, described, and predicted. Seasonal patterns of sunrise and sunset can be observed, described, and predicted.	Grade 1, unit 1
3-5	<p>The Earth's orbit and rotation, and the orbit of the moon around the Earth cause observable patterns. The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily and seasonal changes in the length and direction of shadows; phases of the moon; and different positions of the sun, moon, and stars at different times of the day, month, and year.</p> <p>Some objects in the solar system can be seen with the naked eye. Planets in the night sky change positions and are not always visible from Earth as they orbit the sun. Stars appear in patterns called constellations, which can be used for navigation and appear to move together across the sky because of Earth's rotation.</p>	Grade 5, unit 2

6-8	<p>The solar system contains many varied objects held together by gravity. Solar system models explain and predict eclipses, lunar phases, and seasons. The solar system consists of the sun and a collection of objects, including planets, their moons, and asteroids that are held in orbit around the sun by its gravitational pull on them. This model of the solar system can explain tides, eclipses of the sun and the moon, and the motion of the planets in the sky relative to the stars. Earth's spin axis is fixed in direction over the short term but tilted relative to its orbit around the sun. The seasons are a result of that tilt and are caused by the differential intensity of sunlight on different areas of Earth across the year.</p>	Grade 8, unit 3
9-12	<p>Kepler's laws describe common features of the motions of orbiting objects. Observations from astronomy and space probes provide evidence for explanations of solar system formation. Changes in Earth's tilt and orbit cause climate changes such as Ice Ages. Kepler's laws describe common features of the motions of orbiting objects, including their elliptical paths around the sun. Orbits may change due to the gravitational effects from, or collisions with, other objects in the solar system. Cyclical changes in the shape of Earth's orbit around the sun, together with changes in the orientation of the planet's axis of rotation, both occurring over tens to hundreds of thousands of years, have altered the intensity and distribution of sunlight falling on Earth. These phenomena cause cycles of ice ages and other gradual climate changes.</p>	Earth Science, Units 3 & 4


Elementary Tasks Aligned with Disciplinary Core Idea 1.B - Earth and the Solar System

Link to Science Units of Study: Grade 1: Unit 1 - Sun and Moon


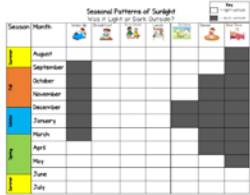
Unit Overview: A study of the predictable patterns of the sun, moon and stars, and how the amount of daylight changes throughout the year.

The unit begins with students engaging in a real world phenomenon of changing views out a window. They observe that at times you can see the moon, the sun, or neither. As a class, they create a driving question board that elevates every students' voice.

Suggested Learning Progression Science Grade 1 - Unit 1: Sun and Moon

Essential Question	What we do and figure out	How We Investigate It and/or Represent It
LESSON 1 How can I predict what I will see out my window at different times of the day? 1-2 DAY	We make observations of three pictures out the same window. One is during the day, and it is bright outside, one is at night and we can see the moon, and one is at night but we can't see the moon. This makes us ask a lot of questions about when we can see certain objects in the sky, and if we can predict when we will be able to see these objects. We figure out: <ul style="list-style-type: none"> Observations can help us ask good scientific questions We have a lot of questions about when we can see the moon, sun, and stars 	
↴ Navigation to Next Lesson: We have lots of questions about objects in the sky and we wonder what kind of data we would need to collect to learn more about these objects and when we can see them.		

In Lesson 4, students analyze daylight data to find patterns. They determine that the amount of daylight changes throughout the year. A lesson overview is below, followed by the lesson in its entirety.

↴ Navigation to Next Lesson: We have observed a pattern in the night sky, and now we wonder if there are patterns in the day sky.		
LESSON 4 How can patterns help us predict the future? 1-2 DAYS	We listen to a story about a surprising difference in daylight at dinnertime. We analyze daylight data to determine patterns over time and determine that daylight changes at different times of the year. We figure out: <ul style="list-style-type: none"> The amount of daylight changes throughout the year Observations can show patterns of the amount of daylight and the time of the year Summer has more daylight (or longer days) than winter 	 
↴ Navigation to Next Lesson: We are wondering about other times that the amount of sunlight might affect our lives.		

Brief Lesson Description: We listen to a story about a surprising difference in daylight at dinnertime. We analyze daylight data to determine patterns over time and determine that daylight changes at different times of the year.

Essential Question: How can patterns help us predict the future?

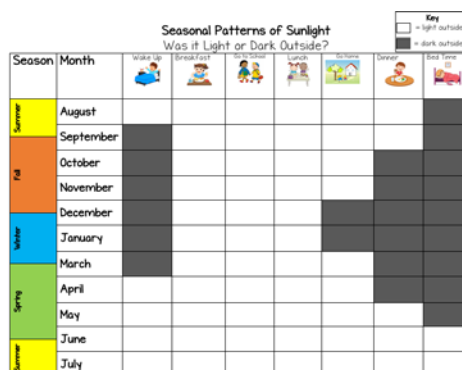
Sentence Frames:

- When it was _____, it was dark/light outside.
- There is more daylight in _____ OR There is less daylight in _____

Lesson Plan:

Engage:

- Tell students a story about noticing the difference in sunlight during a particular time of the day. For example, show [Slide 1](#) and say: *During the summer, my family loves to spend time outside. We love it so much, we even eat dinner at a picnic table in our backyard most nights! We normally start eating dinner inside when the weather gets cooler, during the fall and winter. But, one day in December we were having a beautiful warm day and I thought, why not? We should eat dinner outside tonight! So I got dinner ready, and opened my back door to set the table, and to my surprise (show slide 2) it was dark outside! I was so confused. I found some lights (click to fade in picture) so we could see, but I was so confused! Why was it so dark outside? Was this normal?*
- *I was hoping we could investigate this puzzle today. Show slide 3 and say “I always eat dinner at 6:00, so I know it wasn’t any later in the day. This made me wonder if there was a way to KNOW if it will be light or dark at dinnertime, so I can plan for it. What do you think? Have you ever been surprised to notice a difference in when it is dark or light outside?”*
- Give students a chance to talk with a partner.



Explore:

- Remind students that they have been gathering data to figure out when we can see the sun, moon, and stars in the sky. Other scientists collect data for lots of different reasons, and today we are going to look at some data that other scientists have observed to help us understand daylight (or, when it is light and dark throughout the year) a little better.
- Pass out a Seasonal Patterns of Sunlight Data sheet to each partner pair (and show slide 4). Give students time to explore the chart with their partner or small group and ask questions.

Explain:

- Work with students to understand how to read the chart, as needed. Suggested questions:
 - What is along the top of the chart? (*times of the day, or predictable activities in the day*)
 - What is along the side of the chart? (*Months and seasons*)
 - What do the gray and white boxes mean? (*white means it was light outside, dark means it was dark outside*)
 - Was it light or dark at lunch in August? (*light*)
 - Was it light or dark at bedtime in April? (*dark*)
- Work with students to discuss and identify patterns in the data. Suggested questions:
 - What months have the most daylight? (*June and July*)
 - What season has the most daylight? (*Summer*)
 - What months have the least daylight? (*December and January*)
 - What season has the least daylight? (*Winter*)

Evaluate:


- Have students use the data to answer the question on [Slide 5](#). You can either print the slide for students to circle the months, or have them discuss with a partner and listen to conversations.

Link to Science Units of Study: Grade 5: Unit 2 - Patterns in our Solar System



Unit Overview: A study of the components in the solar system and predictable patterns of objects in the sky as observed from Earth.

The Unit begins with students observing a video and image of star trails in Colorado's skies. Students discuss, ask questions, and then create an initial model of what is causing this pattern in the night sky. Students return to this model throughout the unit to add to and revise their initial thinking.

Suggested Learning Progression Science Grade 5 - Unit 2: Patterns in Our Solar System

Essential Question	What we do and figure out	How We Investigate It and/or Represent It
LESSON 1 Why do objects appear to move in the sky? 1 DAY	We observe how the Colorado sky changes over time through the motion of the stars, clouds, and milky way in the sky. We make observations about the specific movement of objects, the directions they go, and patterns we can establish. As a class, we combine our questions to lead our further inquiry throughout the unit. We figure out: <ul style="list-style-type: none"> • There are visible patterns in the sky • We have more questions about our observations, including movement of stars and clouds, streaks/trails of light, circular paths, and brightness of stars. 	
↕ Navigation to Next Lesson: We collected observable patterns in our sky. We are wondering what objects are in our solar system and how they move and interact.		

In Lesson 5 students track and observe shadows throughout the day to investigate the apparent movement of the sun. A lesson overview is below, followed by the lesson in its entirety.

Essential Question	What we do and figure out	How We Investigate It and/or Represent It
LESSON 5 What patterns in the solar system that can be observed from Earth? 2 DAYS 	We track and record our shadows throughout the day. We make observations about the movement of shadows and their relationship to the sun in the sky. We read and use a model of Earth to investigate the causes of these movements. We figure out: <ul style="list-style-type: none"> • Earth rotates on its axis. • The Earth's rotation is completed every 24 hours. • Shadows lengths and directions change as the Sun changes position in the sky. • The shadow goes the opposite direction of the Sun's placement. 	
↕ Navigation to Next Lesson: We have a better understanding of how daytime, and the apparent movement of the sun across our sky works. We now wonder how this relates to the 24 hour cycle of day and night.		

Brief Lesson Description: Students will explore what makes shadows. They go outside and trace the shadows their bodies make on the schoolyard in the morning. After they draw this shadow, they predict where they will find their shadow when they observe it midday and just before the end of the school day. They relate the change in their shadows' position to the change in the Sun's position in the sky.

Essential Question: What patterns in the solar system that can be observed from Earth?

Sentence Stems:

- I predict my shadow will move _____ because _____

Teacher Preparation: This lesson requires a sunny day, and that students have time to trace their shadows twice in the day. Tracing the first time tends to take a little longer, the second tracing should only require 5-10 minutes. This lesson is designed to take 2-3 days to complete, you may choose breakpoints based on your schedule.

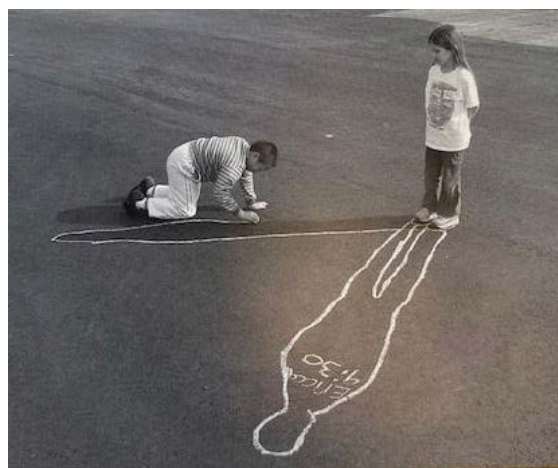
Lesson Plan:

Engage:

- Display the first [Picture of Shadows](#) (page 1) for students. Ask them what they notice about the person and the shadow. Why is there a shadow?
- Display the second picture (page 2). What additional noticings do they have? What questions do they have? (Students should notice that the shadows in picture 2 are much shorter than the shadow in picture 1, and picture 1 has a greater angle away from the person)
- Introduce the learning intention for the day

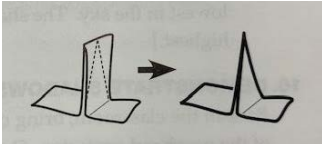
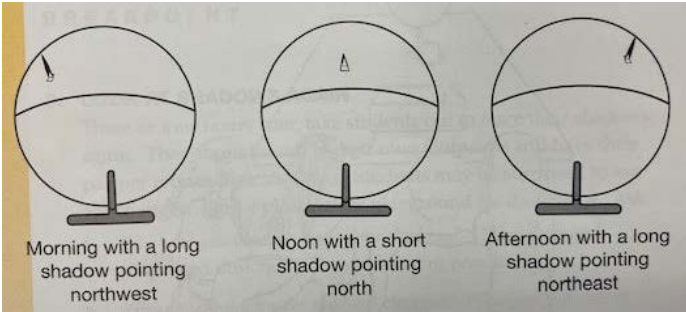
Explore:

- Tell students that today they will be going outside to observe their shadows. They'll observe once in the morning and again in the afternoon. Review rules for outside behavior.
- Tell students they will continue working in pairs. They will take turns tracing the outline of their partner's shadow and their partner's feet. Each shadow should be labeled with the owner's name and the time of day it was drawn.
- Distribute one piece of chalk to each pair. Take the class outside. Review the cardinal directions out on the playground. You may want to bring along a compass to confirm the cardinal directions.
- Ask students to spread out enough so their shadows will not overlap one another or be overshadowed by buildings and trees later in the day.
- Remind students to trace around both of the partner's shoes and to label their tracings inside the shadow outline with their name and the time of the day. **(This is important as they will return to their same location later in the day).**
- Ask, Which direction are your shadows pointing? [Shadows should be pointing toward the west in the morning.]
- Discuss observations and make predictions by asking,
 - Why do you have a shadow?
 - What direction did your shadows point?
 - After lunch, will your shadow fall right into the outline you traced?
 - Predict which direction your shadow will point this afternoon.
- Have them record their predictions in their science notebooks.
- **Three or four hours later, take students out to trace their shadows again.** They should stand in their own footprints and have their partner retrace their shadows. Students may be surprised to see the changes. Find a place on the playground for discussion.
 - Ask, What did you observe about your shadows? [They changed shape and direction. They now point northeast.]
 - Why do you think your shadows changed? [The Sun's position in the sky changed.]
- Help students to make the connection between the Sun's position in the sky and the location of their shadows. When the Sun is in the east in the morning, their shadows point west. When the Sun is in the west in the afternoon, their shadows point east.



- Ask. When do you think you will have the longest shadow? The shortest shadow? [The shadow is the longest when the Sun is lowest in the sky. The shadow is the shortest when the Sun is highest.]

Explain:

- Back in the classroom, bring out the globe and place it in front of the overhead projector (or provided lamp base). Tell students that the light from the projector/lamp represents the Sun, and the globe is Earth. Have students notice that the side of the globe toward the lamp is brightly lit. The side away from the lamp is dark. There is also a circular shadow on the wall behind the globe.
 - Have a student help you find your state on the globe. Place a small piece of masking tape on the location. It should stick up 1-2 cm. Trim it into a triangle. Explain,
 - The Earth rotates on its **axis** once every day. It takes 24 hours for it to rotate. Watch what happens to our state as **I rotate** the globe. Notice when it is in the lighted area and when it is dark.
 - Rotate the globe slowly counterclockwise (when viewed from above the north pole). Have students watch the shadow of the tape triangle carefully.
 - Rotate the globe again, hesitating as the triangle just comes into the light and casts a shadow. This is morning, some time shortly after sunrise. Ask students to describe the direction it is pointing. [Northwest.] Continue rotating to the noon position and observe the shorter shadow. Finally, hesitate at the afternoon position before rotating your state into darkness.
- 
- 
- Confirm directions on the globe. Ask
 - Where is west on this globe? Where is east on this globe? Where is north on this globe.
 - Remind students that Earth rotates on its axis from west to east. Continue discussing shadows.
 - What direction is the shadow pointing in our state early in the morning? [**Northwest**- halfway between north and west.]
 - What direction is the shadow pointing in our state around noon? [North]
 - What direction is the shadow pointing in our state late in the afternoon? [**Northeast**- halfway between north and east.]
 - Why does the shadow change direction during the day? [The Sun moves across the sky as the day progresses. That changes the direction from which the sunlight is coming.]
 - How long is the shadow in the morning, noon and afternoon? [The shadow changes length- long in the morning, short at noon, and long again in the afternoon.]
 - Why does the shadow change length? [Shadows change length because of the angle from which the sunshine comes.]
 - Why does the shadow change direction and length between morning and afternoon? [Because the position of the Sun in the sky changes during the day.]
 - Allow students to come up and rotate the globe showing sunrise, noon, and sunset.

Elaborate:

- Have students read Changing Shadows and The Sun as a whole group, partner, have partners each read one and share, or whatever works best for your class.
- Students should work on the Sun and Shadows Notebook Sheet.

Evaluation:

- Return to the [Picture of Shadows](#) from the engage section. Ask students: Which image was most likely taken in the early morning? Use evidence to support your claim.
- Students can answer verbally, or using the [Exit Ticket \(slide 5\)](#)

le School Tasks Aligned with Disciplinary Core Idea 1.B - Earth and the Solar System
From Discovery Education

ACTIVITY 9

Hands-On Investigation: Modeling Direct and Indirect Rays



Student Objective:

I can use a model to demonstrate why locations on Earth receive different amounts of solar radiation.

SEP

Developing and Using Models

CCC

Cause and Effect

Investigating Direct and Indirect Rays

Predict

Make a prediction. How might the angle of the sun impact temperature?

Activity Procedure

Now you will complete the investigation.

1. Prop up the protractor against the wall or other vertical surface.
2. Line your phone's front-facing camera up with the 90-degree line.
3. Make sure that your phone's camera is in the front-facing mode.
4. Turn off the lights in the room and reduce as much ambient light as possible.
5. Turn on the light meter app.

What materials do you need? (per group)

- Flashlight
- Smartphone
- Protractor
- Light meter app



Safety

Follow all safety guidelines. Wear proper safety attire as needed for the materials being used. Tie back long hair, and remember not to eat or drink anything in the lab. Do not look directly at the flashlight. Do not shine the flashlight in anyone's eyes. Once the lights are turned off, do not move about the room.

6. Turn on your flashlight and shine it at the camera sensor.
7. Move the flashlight along the edge of the protractor to notice the angle of the light affect the intensity of light recorded by the sensor. (Note: At 90 degrees, the angle of light is direct light. Higher light-intensity values indicate higher temperatures in the atmosphere.)

Indirect Light



Direct Light



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How do direct and indirect angles of light seem to impact intensity?

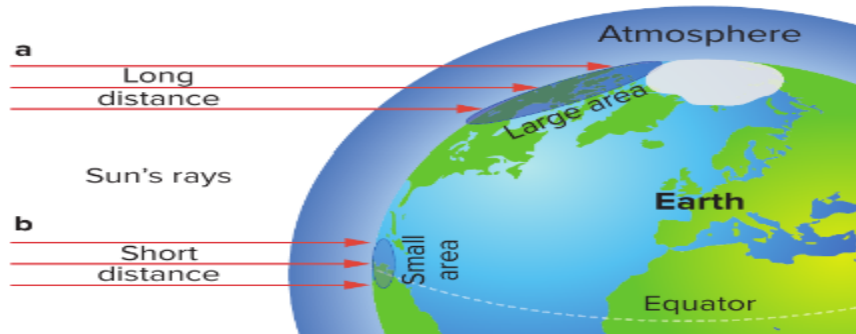
Discuss your observations with your partner. **Record** your answer in the space provided.

Observing Sun's Rays

You may recall that scientists often use models. These can help them understand or explain a phenomenon. You can create a model to help you visualize what causes different locations on Earth to receive differing amounts of radiation from the sun.

Examine the image and **make** observations.

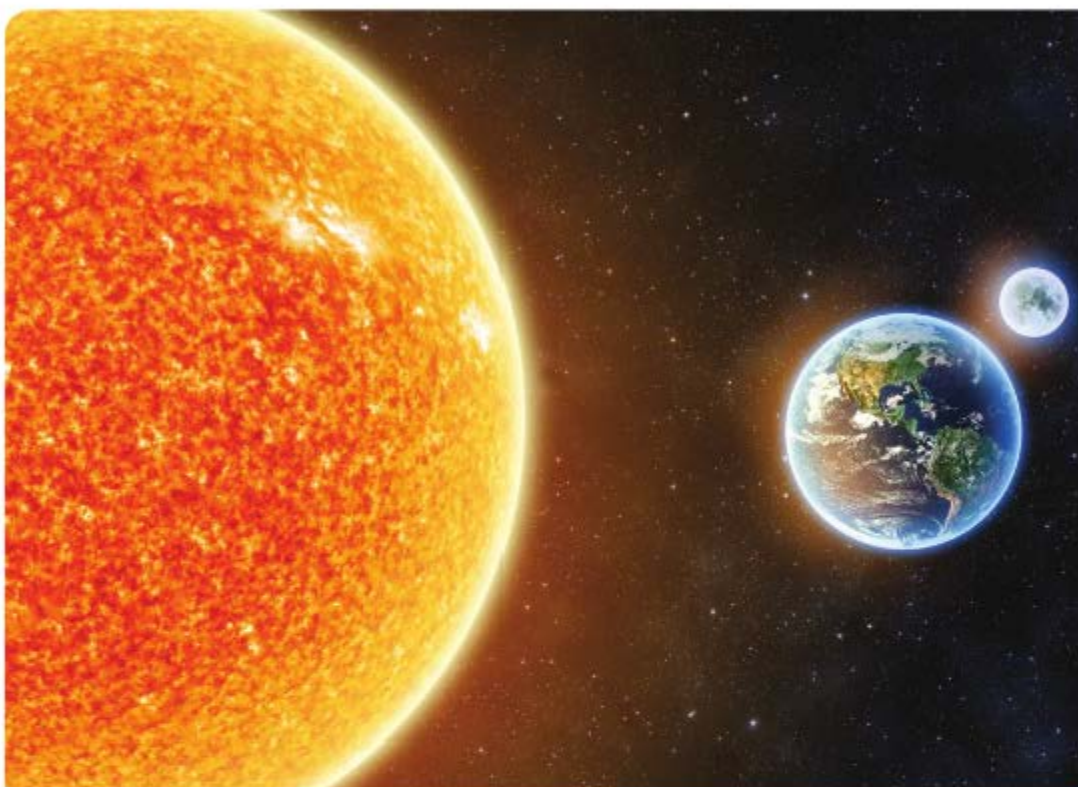
Earth Surface Area Lit by Sun's Rays



© Discovery Education | www.discoveryeducation.com • Credit: Peter Heller

Sun's Rays

Identify locations on the globe that have direct angles of light and areas with indirect angles of light.



Earth and Sun (Not to Scale)

Making Predictions About the Sun's Radiation

Consider the shape of the Earth and how this shape would affect the energy received at places either above or below the equator. **Make predictions** about what will happen to the amount of the sun's radiation that places on Earth would receive, as you consider locations that are north of the equator. **Record** your predictions in the space provided.

Analyzing and Constructing Explanations for Modeling Light on Earth

Analysis and Conclusions

Answer the following questions using a claim, evidence, and reason approach.

Based on the results of your investigation, what conclusion can be made regarding the heat that is delivered to areas on Earth based on their location relative to the equator?



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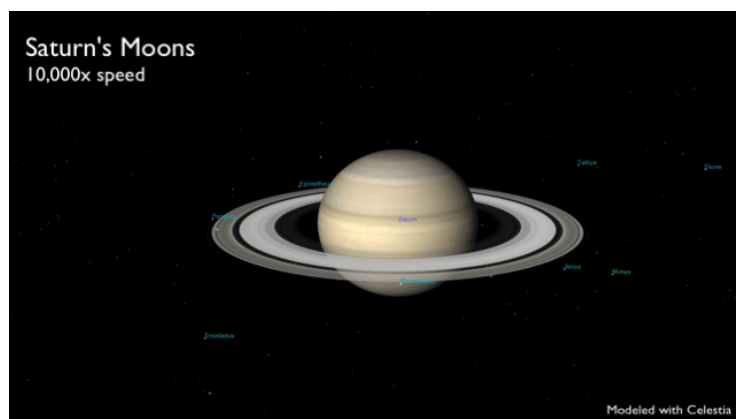
Use your answers to create a summary statement about the heat that reaches Alaska from the sun.

What conclusion can you make in terms of the water temperatures around the equator as compared to the water temperatures at the poles?

High School Tasks Aligned with Disciplinary Core Idea 1.B - Earth and the Solar System

Background

Astronomers have identified 82 moons orbiting the planet of Saturn. Only fifty-three of these moons have been confirmed and officially named. The animation to the right shows some of the larger moons orbiting at 10,000x normal speed. A more detailed version of this simulation can be viewed by clicking on this [YouTube video](#). You will be analyzing the orbits of some of the larger moons to better understand Kepler's Laws of Motion.



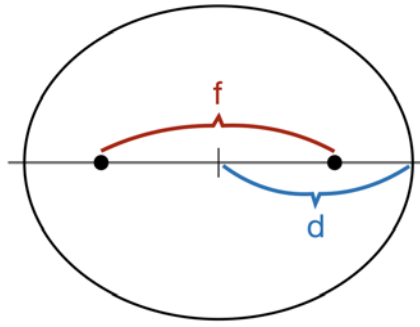
Name	Diameter (km)	Eccentricity	Orbital period (days)	Semi-major axis (km)
Titan	5149	0.0288	15.95	1221870
Rhea	1527	0.0013	4.52	527108
Iapetus	1470	0.0277	79.32	3560820
Dione	1123	0.0022	2.74	377396
Tethys	1062	0.0001	1.89	294619
Enceladus	504	0.0047	1.37	237948
Mimas	396	0.0196	0.94	185539
Hyperion	270	0.1230	21.28	1481009

1. Use the evidence above to complete the questions in the table below.


Evidence	What patterns do you observe? Be sure to use data from the figure to support your answer
Animation or video of Saturn's moons	
Data on Saturn's largest moons	

Kepler's First Law

The trajectories of orbiting bodies, including planets, moons, or human-made spacecraft; each of which depicts revolving body's eccentricity $e = f/d$, where f is the distance between foci of an ellipse, and d is the ellipse's major axis length.



2. Draw and describe the orbits of **Titan** and **Tethys** in the space below. Use values from the previous page to make your orbits as accurate as possible.

Drawings	Description
	

Kepler's Third Law

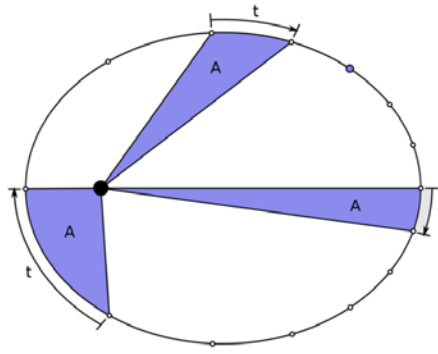
The square of a revolving body's period of revolution is proportional to the cube of its distance to a gravitational center ($T^2 \propto R^3$), where T is the orbital period and R is the semi-major axis of the orbit.

$$T^2 \propto R^3$$

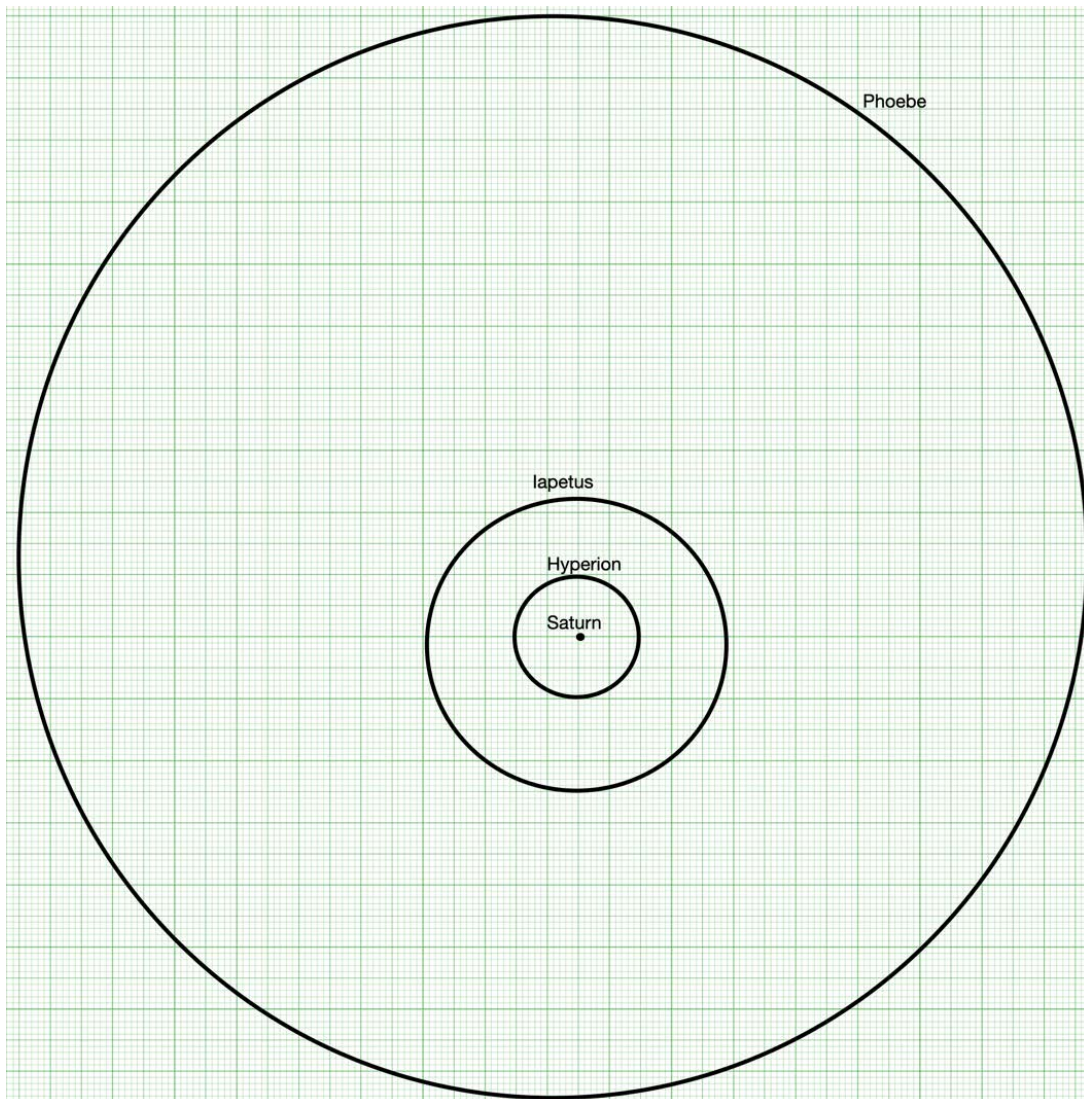
3. Use a calculator or spreadsheet to show that the **proportion** of Kepler's Third Law holds true for the moons of Saturn.

Kepler's Second Law

An orbiting body sweeps out equal areas in equal time.



4. The orbits of Phoebe, Iapetus and Hyperion are shown below. Use your knowledge of Kepler's 2nd Law to **label** and **prove** the two locations where Phoebe will be going fastest and slowest as it orbits Saturn.



Civics teaches students the complexity of the origins, structure, and functions of governments; the rights, roles, and responsibilities of citizenship; the importance of law; and the skills necessary to participate in all levels of government. Civics is a foundational component of the educational experience and critical to the continued success of our society. A democratic and free society relies on the skills, knowledge, engagement and virtue of its citizens.

Narrative

The National Council for the Social Studies (NCSS) recently defined the [purpose](#) of our content as follows:

“Social Studies helps students navigate the world. By exploring the past, participating in the present and looking toward the future, **Social Studies prepares learners for a life-long practice of civil discourse and civic engagement in their communities and the world.**”

In 2021, the Strengthening Civics Education Bill ([SB21-067](#)) was passed requiring increased specificity in Civics standards and opportunities for students to pursue civic engagement beyond their classrooms. In the recently revised standards, Civics standards were updated to respond to these requirements.

As you review the sample lessons and assessments below, you will see how this strand develops over the course of students’ K-12 education. In second grade, students examine their role within their school and/or local community and consider how they might take action to solve a problem or improve their community. In fifth grade, within the context of the preparation for Young Ameritowne, students consider how to demonstrate their personal responsibility as members of a classroom community. Later in the year, they explore the civic ideals that inspired colonists to separate from Britain and fight for their independence. In seventh grade, students explore civic responsibility and participation in government through the lens of a variety of past civilizations.

Each year, K-12, students build upon their understanding of what it means to be a citizen and what it looks like to engage in meaningful ways. Ultimately, this learning culminates in a Civics course that is required for graduation in Colorado. Recently, we shifted the high school scope & sequence so that Civics will now be taught in 11th grade instead of 9th grade. This will be a huge benefit for students; they will now be able to register to vote and hopefully will develop a deeper understanding of what their life as an educated and responsible citizen will entail after high school. The advisory team has thoughtfully redesigned the action project for this course to span the course of the semester and build upon the learning in each unit. In the past, it was a project done in the final unit, which often meant that it felt rushed and students did not receive responses from legislators and leaders prior to the end of the semester. With an earlier opportunity to develop and take steps towards their plan, we are hopeful that students will see more impact and engagement as a result of their work.

Grade Level	Standard	Unit(s)
2	<p>Civics 1: Investigate ways in which ideas and actions can improve communities.</p> <p>C1b: Describe ways in which you can take an active part in improving your school or community.</p>	<p>Unit 1: My Role in the Community</p> <p>Summary: A study of how people engage in civic participation.</p> <p>Essential Questions: How do individual ideas and actions improve communities?</p>
5	<p>Civics 1: Construct an understanding of the foundations, rights, and responsibilities of citizenship in the United States.</p> <p>C1a: Describe and explain examples of individual rights as a foundation of citizenship.</p>	<p>Unit 1: Responsible Citizenship & Financial Literacy</p> <p>Summary: A study of the personal responsibilities of citizens in the United States and how citizens use financial institutions to manage and develop their finances.</p>

	<p>C1b: Give examples of group and individual actions that illustrate civic ideals in the founding of the United States.</p>	<p>Essential Question: How do we demonstrate our responsibility? —</p> <p>Unit 5: Forming an Identity</p> <p>Summary: A study of the growing tensions between the 13 Colonies and Great Britain.</p> <p>Focus Question: What civic ideals shaped the early American colonies?</p>
7	<p>Civics 1: Investigate similarities and differences of civic participation within different governmental systems of the Eastern Hemisphere.</p> <p>C1a: Describe civic virtues and principles that guide governments and societies.</p> <p>C1b: Analyze the opportunities and limitations of civic participation in societies in the Eastern Hemisphere.</p> <p>C1e: Analyze the opportunities and limitations of civic participation in societies in the Eastern Hemisphere.</p>	<p>Unit 2: Foundations & Legacy</p> <p>Summary: A study of the roles (how the society enables the citizen to participate) and responsibilities (what the government expects citizens to contribute) of citizens in the ancient world (Greece, Rome, and China) and their contributions to developing a foundation for political participation.</p> <p>Essential Question: Why do various civilizations develop different civic virtues and principles? How does this impact civic participation? -----</p> <p>Unit 4: Middle Ages in Europe and the Middle East</p> <p>Summary: A study of cultural and political perspectives and how they contributed to cooperation and conflict between regional groups during the Middle Ages.</p> <p>Inquiry Question: To what extent does isolation or interaction influence the development of cultural and political identity?</p>
HS	<p>Civics 1: Research and formulate positions on government policies and on local, state, tribal, and national issues to be able to participate and engage in civil society.</p> <p>C1b: Describe and evaluate the effectiveness and acceptability of a variety of methods of civic participation that individuals and groups may use to shape policy at various levels of government.</p> <p>C1c: Explain the roles and influence of individuals, groups, and the press, as checks on governmental practices.</p>	<p>Unit 2: American System of Government</p> <p>Summary: A study of the evolving structure and function of the American government.</p> <p>Inquiry Questions: How is the American government structured? How does it allow for and respond to change? What are the structures that hold the American government and its officials accountable? -----</p> <p>Unit 3: Policy in Action</p> <p>Summary: A study of how individuals and government influence domestic and foreign policy.</p> <p>Essential Question: How do individuals, groups, and leaders engage in American democracy and influence public policy?</p>

Action Research Project- Community Problem and Solution Action Research\
Civic standard 1 (DOK 3)

This assessment is designed to take multiple days and includes time for students to conduct research as a class that is guided by the teacher. The thought behind the assessment is to show students how community problems can be solved and what role they can play in the solution.

Step 1: Show students possible problems that exist in the community. The community can be the school or the local community but for the purposes of this assessment should not go broader than that. Ways in which to generate a list of problems could include:

- brainstorm a list of problems as a class (examples might be trash on the playground or around the school, cafeteria, noise in halls, classroom community, recycling in the classroom)
- go on a walking tour of the school to identify possible issues that exist
- invite the principal, custodian or other school personnel in to discuss problems that they hear about
- Identify a problem as a class to work on

Step 2: Research

- Interview (if needed) school community members to talk about problems facing the school.

Step 3: Putting it all together

- Class or small groups create a presentation (Prezi, poster, Powerpoint, or other) including:
 - problem
 - The solution that includes roles that individuals (the principal, individual students, and teachers) and school community groups (PTA, student council, etc.) would take
 - Action steps that include who makes what decisions and what students will do to put their solution into action

Once the plan is done students will present their solution to an authentic audience.

Reflection Question: How did this project help you improve your civic responsibilities?
How do you think it affected the people you presented to?

[Success Criteria](#) are provided for this project.

Reflection Journal:

What are some ways you improve your community?

<p>I can improve my classroom by:</p> <ul style="list-style-type: none">● _____ _____ <p>Draw a picture here:</p>	<p>I can improve the playground by:</p> <ul style="list-style-type: none">● _____ _____ <p>Draw a picture here:</p>	<p>I can improve my home by:</p> <ul style="list-style-type: none">● _____ _____ <p>Draw a picture here:</p>
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What are some additional ways you will show civic responsibility in the future?

<p>I will show civic responsibility in my classroom by:</p> <ul style="list-style-type: none"> • _____ _____ <p>Draw a picture here:</p>	<p>I will show civic responsibility on the playground by:</p> <ul style="list-style-type: none"> • _____ _____ • Draw a picture here: 	<p>I will show civic responsibility at home by:</p> <ul style="list-style-type: none"> • _____ _____ <p>Draw a picture here:</p>
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Grade 5: Unit 1 Sample Classroom Constitution Lesson

Classroom Constitution

Essential Question:

How can we make sure everyone in our classroom feels safe and

Learning Intention:

I can **identify** the rights and responsibilities of a citizen in my classroom.

Success Criteria:

I am successful when I **contribute** at least 2 rights or responsibilities in my class discussion.

I can **create** a list of the rights and responsibilities of my classroom.

Materials:

Printed or digital copy of the [constitution](#).

[Talking chips](#)

Explore:

Project or give small groups a copy of this [source](#). Give students 5 minutes to explore and make connections using Talking Chips.

I notice ____ this makes me think ____	I have a question about _____	I wonder _____
--	-------------------------------	----------------

Engage:

Have a representative from each group share out 2 big ideas from their discussions while the teacher charts. Explain the Constitution is the supreme law of the United States of America. As responsible citizens of the United States, it is important that we follow these laws and rules. The constitution protects our rights as citizens.

In small groups or as a class discuss and brainstorm what these 3 words mean.

Rights	Responsibility	Citizen
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In small groups have students create a list of rights using the sentence frame:

In our class everyone has the right to _____

Share out whole group creating a master list of classroom rights.

Once your rights are established, shift the focus to responsibilities. In small groups have students discuss using the sentence frame:

To protect our right of _____ we will do _____

For example: *To protect our right to be safe we will put all materials away appropriately.*

Next, have groups share ideas adding them to your class list.

Then, as a class, discuss how we would handle situations in which our rights are not honored? Encourage students to think about things like mediation, or a peace table.

Once you have gathered all the information, create a written or typed document for students to sign.

Grade 5: Unit 5 Lesson Examples

Learning Intentions:

- I can provide examples of the civic ideals that led to the revolution.
- I can analyze a variety of primary sources from the pre-revolutionary era.

Lesson 1: Colonial Government

- Project the first image in the [slide deck](#) and have students complete a 1 minute [Jot Thoughts](#) of all the things they think *might* be happening in the painting. Have small groups or partners do a continuous Round Robin sharing their ideas with the group. Then, project the second image in the slide deck and have students complete another Jot Thoughts of all the things they think *might* be happening in the painting. Again, have them share with their groups through a continuous Round Robin. Now, project the two images side by side and ask for volunteers to share what similarities and differences they see between the two images (ex. Similar - all men, one person seems to be speaking; different - inside/outside, formal/informal, etc...). Explain that the first image is of a meeting of Virginia's House of Burgesses and the second is an image portraying a town meeting in the New England colony. While different in form, both of these served as examples of early self-government in the colonies and we are going to begin exploring how this early self-government developed and the impact it had on the colonies eventual decision to revolt against the king and become an independent nation.
- Introduce the learning intention to students. Ask students to share what they already know about the colonial government from the previous unit and what they know about the monarchy in England. (Ex. students may recall the Mayflower Compact, that some colonists participated in local government, that the king was the leader in England, colonies were ultimately controlled by England, etc...). Explain that today we will be looking at the differences between monarchy and representative government.
- Have students login to Student World Book through their Portal Dashboard and hand out copies of this [graphic organizer](#). Have students work with a partner to review the World Book resource pages (or other resources you choose to use) to fill in the graphic organizer together. Then, have them use the information to complete the exit ticket individually.
- Exit ticket: Which form of government would you prefer to live in? Explain your answer.

Lesson 2: Enlightenment

- Introduce the learning intention to students. Explain that we will be examining some of the thinkers and shifts in thought that occurred in the 1700s during a period called the Enlightenment. Many of these ideas were central to the government that was eventually established in America, so we want to understand how and why these ideas emerged.
- Have students complete a [quote walk](#) with quotes from different Enlightenment thinkers. As they read the quotes, students should think about what the quotes mean to them and discuss with their partners.
- In partners, have students select a quote to write in their own words. Each student will write the quote on their own first, then pairs compare the quotes they've written.

- Then have the partners group up with another pair of students to compare their quotes.
- As a class, discuss how these quotes and thinkers could have impacted the colonists' decision to form an independent nation.

Grade 7: Unit 2 Assessment Example

C1a-b. In each of the boxes below describe the responsibilities of citizens and civic virtues of each government. Use the source below and your learning from class to complete the chart. You should have at least three descriptors in each box.

Classical Greece	Roman Republic	Han China
<p><i>This source is taken from a speech by Athenian leader Pericles after a battle of the Peloponnesian War. Pericles used this as an opportunity to expand on the values of Greek democracy.</i></p> <p>"Our constitution does not copy the laws of neighbouring states; we are rather a pattern to others than imitators ourselves. Its administration favours the many instead of the few; this is why it is called a democracy. If we look to the laws, they afford equal justice to all in their private differences; if no social standing, advancement in public life falls to reputation for capacity, class considerations not being allowed to interfere with merit; nor again does poverty bar the way, if a man is able to serve the state, he is not hindered by the obscurity of his condition.</p>	<p><i>This source is taken from an early Roman legal code. A commission of 10 men was appointed to create laws that would address both plebeians and patricians.</i></p> <p>V. 8 The inheritance of a Roman citizen-freedman is made over to his patron, if the freedman has died intestate and has no natural successor.</p> <p>VIII. 23 "Whoever is convicted of speaking false witness shall be flung from the Tarpeian Rock."</p> <p>IX. 3 "The penalty shall be capital punishment for a judge or arbiter legally appointed who has been found guilty of receiving a bribe for giving a decision."</p> <p>IX. 6 "Putting to death... of any man who has not been convicted, whosoever he might be, is forbidden."</p> <p>XI. 1 "Marriage shall not take place between a patrician and a plebeian."</p>	<p><i>This source is taken from an account on Confucius's teaching. Confucius was a teacher that offered advice to rulers. He was a successful teacher, his students compiled his thinking after his death.</i></p> <p>1:2 Master You [You Ruo] said, "Among those who are filial toward their parents and fraternal toward their brothers, those who are inclined to offend against their superiors are few indeed. Among those who are disinclined to offend against their superiors, there have never been any who are yet inclined to create disorder. The noble person concerns himself with the root; when the root is established, the Way is born. Being filial and fraternal — is this not the root of humaneness?"</p>
<u>Responsibilities</u> of a Citizen:	<u>Responsibilities</u> of a Citizen:	<u>Responsibilities</u> of a Citizen:
<u>Civic Virtues</u> Evident:	<u>Civic Virtues</u> Evident:	<u>Civic Virtues</u> Evident:

C1a/C1b/C1e. Looking at the above sources, write one paragraph comparing the civic virtues and participation of citizens in two of the locations. Make sure in your answer you identify at least one similarity and one difference.

Grade 7: Unit 4 Assessment Example

Feudalism	Caliphate
<p>Feudalism is the name for a type of political and military system in which people gave military and other services to a <u>noble</u> person called a <i>lord</i> in return for protection and the use of land. Historians originally used the term to describe conditions that arose in western <u>Europe</u> during the <u>Middle Ages</u>. The Middle Ages lasted from about the A.D. 400's through the 1400's. Some historians claimed that a feudal system developed to fulfill the basic need for justice and protection at a time largely without effective <u>governments</u>.</p> <p>Military service in the Middle Ages Many influential men, and some influential women, in medieval Europe maintained small armies and paid the men in these armies with money, with room and board, and sometimes with land as well. But these influential people were expected to use these armies to support the king and the king's commands. All lords had to take oaths of loyalty to obey the monarch and to follow the monarch's laws. Even with the small armies created by powerful nobles, the great majority of the men who went to war in medieval Europe were not professional soldiers. Most military service of the Middle Ages remained based on the obligations of normal citizenry. These medieval <u>militia</u> men had to serve in the monarch's army when he called them to war. The more land that a person had, the more military service a person owed to the monarch. But when there was no war, these people lived on their farms and tended their crops.</p>	<p>Abbasid caliphate <<uh BAS ihd or AB uh sihd, KAY luh fayt or KAL uh fayt,>>was an Islamic empire that lasted from 750 until 1258. At its height, it stretched from Morocco and Spain to what is now Uzbekistan and from Armenia to Yemen. The Abbasid Empire was ethnically and culturally diverse. Many people lived in large cities. Arabic was the language of government, religion, and intellectual life. The population was active in agriculture, the arts, industry, and trade. Literature, philosophy, and science also flourished. To unite their large and diverse empire, the Abbasid caliphs turned to Islam. Sunni Muslim religious scholars developed a sophisticated body of Islamic law and theology during this period. Abbasid caliphs claimed to rule by divine right, but they relied on a powerful military force and a complex system of government to manage their empire. During the 800's and 900's, the Abbasid caliphate dissolved into a number of smaller states. The caliph continued to represent Islamic unity, and the leaders of these smaller states claimed to rule in his name. Islamic culture and interregional trade remained strong.</p>

Based on the readings above and your background knowledge fill in the similarities and differences chart below. Be sure to include details about characteristics of the government and opportunities and limitations for citizen participation in each system.

Feudalism - Europe	Differences/Contrast	Similarities/Compare	Caliphate-Middle East	Differences/Contrast

High School Civics: Unit 2 Project Component

Task: Identify a civic issue of personal importance and the appropriate level of government to address it(C1a, C1b, C1c, C3b).

Assessment Description:

- A completed Research Catcher that identifies a relevant problem and the appropriate level of government to address it. They will be working on this topic through unit 3, this is Task 1 of 4 part project. They also need a completed Bibliography that tracks the sources they used.(A check of topics is suggested)

Task 1: The Problem Research Questions

Questions	Answers
Brainstorm: Identify various civic issues that relate to your life and community.	Topic 1: Topic 2: Topic 3:
Pick the topic most interesting to you and explain why the problem exists in the community? <ul style="list-style-type: none"> What is causing this problem? Why do you feel it is a problem? 	This problem exists in the community because....
Is this a serious problem in your school/community? <ul style="list-style-type: none"> What groups of people are impacted by the problem? What are the impacts of the problem? (social/emotional, economic, political, etc.) What data do you have to support this? 	The groups impacted by this problem are.... The impacts of the problem are....
Why is it a problem that should be solved by the government?	This problem should be solved by the government because.....
What laws or policies already exist to deal with the problem at different levels of government? (there may not be something at all levels)	School District Policy: City level policy: County level policy: Special District Policy: State Level Policy: National Policy:

What level of government would best be suited to address this issue? Why?	
Who might disagree (counterclaim) <ul style="list-style-type: none"> Do they have a different perspective or idea about: <ul style="list-style-type: none"> How should the issue be handled? If so, why? Whether this is in fact an issue? If so, why? The cause of the problem? If so, why? The best solution to the problem? If so, why? 	
Are there groups already engaged in this work? (interest groups)	
Websites Used(MLA format)	Source 1:
	Source 2:
	Source 3:

High School Civics: Unit 3 Project Component

Task: Create/change a policy to address a civic issue and create a plan for advocacy for it.(C1b, C1e, C3a)

Assessment Description:

- Students will create possible solutions/policies that will address their previous issues they identified in Unit 2. They will first need to identify the current policies in place trying to address the issue. Then they will begin to plan and craft their own solution. Once they have created a solution/policy, they will need to create an Action Plan to help share their solution/policy with the community and government.

Task 2: Possible Solutions

Starting Questions:	Answers:
What is the current policy that deals with this issue (there might be more than one) <ul style="list-style-type: none"> What level of government is this policy from? 	
What <i>isn't</i> working about established policies and laws? Why?	

What <i>is</i> working about established policies and laws? Why?	
Should certain components of existing laws/policies be changed, added, removed, or expanded to reach other areas? Why?	

Solution Crafting:

What is your proposed solution?	My solution to the current policy is....
What are the advantages of your proposal?	The advantages of this are....
What are the disadvantages of your proposal?	The disadvantages of this are....
What are the costs associated with your policy? <ul style="list-style-type: none"> • Would you need to hire more people to enforce it? • Would the government be required to regulate things? • Does it require new technology to work? Research to estimate these figures.	
How is your policy constitutional? Find something specific in the Constitution that can support your solution.	Our policy is connected to the.....amendment in the constitution because.....
Which government officials at the level you are engaging with are likely to support this policy?	The people who are most likely going to support this solution are... because....
Which government officials at the level you are engaging with are not likely to support the policy?	The people who might not like this solution are.... because....
Websites Used:	Source 1:
	Source 2:
	Source 3:

Task 3: Action Plan

Questions:	Answers:
Who are individuals or groups who may want to SUPPORT your policy? What could you do to win their support?	Question 1: Influential officials or agencies that I think would support my solution would be.... Question 2: We might be able to gain their support by
Who are individuals or groups who may NOT support your policy? What could you do to win their support?	Question 1: Influential officials or agencies that I think would support my solution would be.... Question 2: We might be able to gain their support by

Make Contact: State your call to action	Who will you contact? What is their role? Why do you believe this is the best person to contact? What specifically will you ask this government leader to do to solve the problem?
What are your ACTION PLANS to get others to support your solution? -List 2 actionable steps that you could propose while talking to them	Action step #1: My next step to start changing the policy would be.... Action step #2: Another step I could take to change the policy could be....

Students can create a website or other method to display their civic actions. Below is a list of potential possible actions that may be used in the website. Teachers are encouraged to assess as they see fit (quantity, quality, choice, points, rubric, etc...)

Possible Actions

- Formal Communication to a lawmaker/representative
- Community Presentation
- Social media Campaign
- Informational Video Presentation(7 - 10 Minutes)
- Editorial
- Podcast(7-10)
- Google Site
- Informational Vlog
- Poster Board
- Share and comment on News articles
- Original Memes
- Informational Blog Post
- Original Artwork, poem, or song that conveys a message about issue
- Interview an expert and share what they had to say
- Interview a person impacted by the problem
- Create an Advertisement for your solution
- Create a form email or script that people can use to call or send a letter or email to their local leader and ask them to do something about the topic.
- Create a Social Media account that advocates for your solution
- Etc...

COMPLIANCE STATEMENT:

The District's performance during the monitoring period complied with the standard as the GVC data provide evidence of a rigorous, well-articulated curriculum and the opportunity to demonstrate and communicate complex reasoning across all grade levels.

INTERPRETATION:

I interpret the following language:

d. Students in all subgroups will show appropriate academic growth each year.

to mean:

Evidence shall be presented to demonstrate that students, overall and by subgroup, demonstrate growth at or above average compared to peers either across Colorado or across the nation.

GROWTH DATA:

Median Growth Percentile (MGP) on CMAS by Level

School Level	Content Area	Spring 2019	Spring 2022	Spring 2023	Change 2022 to 2023
Elementary	ELA	52	53	49	-4
	Math	53	57	53	-4
Middle	ELA	53	47	47	0
	Math	60	50	50	0

Fall-Spring Median Conditional Growth Percentile (MCGP) on NWEA MAP by Level

School Level	Content Area	Spring 2019	Spring 2021	Spring 2022	Spring 2023	Change 2022 to 2023
Elementary	Reading	52	39	51	57	6
	Math	53	38	57	59	2
Middle	Reading	53	46	47	49	2
	Math	60	45	56	56	0

MGP on CMAS by Disaggregated Group

Content Area	Subgroup	Spring 2019	Spring 2022	Spring 2023	Change 2022 to 2023
ELA	Asian	59	60.5	56	-4.5
	Black	47	50	49	-1
	Hispanic	49	46	44	-2
	Native American	53	N/A	23	N/A
	Two or More Races	52	54	52	-2
	White	52	50	50	0
	ELL	51	48	44	-4
	Free/Reduced Lunch	48	44	43	-1
	Gifted & Talented	56	58	58	0
	Students with IEPs	44	32	37	5
Math	Asian	63	64	61.5	-2.5
	Black	53.5	50.5	51	0.5
	Hispanic	52	49	46	-3
	Native American	49	N/A	52	N/A
	Two or More Races	54	59	56	-3
	White	56	56	55	-1
	ELL	56	49.5	47	-2.5
	Free/Reduced Lunch	52	48	45	-3

	Gifted & Talented	61	59	60	1
	Students with IEPs	46.5	41	38	-3

Fall-Spring MCGP on NWEA MAP by Disaggregated Group

Content Area	Subgroup	Spring 2019	Spring 2021	Spring 2022	Spring 2023	Change 2022 to 2023
Reading	Asian	56	42	54	55	1
	Black	51	39	52.5	52	-0.5
	Hispanic	50	36	46	49	3
	Native American	47.5	38	46.5	63	16.5
	Two or More Races	55	45	51	57	6
	White	55	46	52	57	5
	ELL	46	27	45	44	-1
	Free/Reduced Lunch	50	35	45	49	4
	Gifted & Talented	54	47	55	58	3
	Students with IEPs	39	28	36	36	0
Math	Asian	60	43	63	61	-2
	Black	47	30	53.5	57	3.5
	Hispanic	51	31	52	53	1
	Native American	45	29.5	60	59	-1
	Two or More Races	55	45	60	63.5	3.5
	White	58	46	59	62	3
	ELL	50	26	54	53	-1
	Free/Reduced Lunch	51	31	53	53	0
	Gifted & Talented	60	49	64	62	-2
	Students with IEPs	40	31	44	47	3

MGP on PSAT/SAT

School Level	Content Area	Spring 2019	Spring 2022	Spring 2023	Change 2022 to 2023
High	Evidence-based Reading & Writing	47	50	48	-2
	Math	54	52	51	-1

MGP on PSAT/SAT by Disaggregated Group

Content Area	Subgroup	Spring 2019	Spring 2022	Spring 2023	Change 2022 to 2023
Evidence-based Reading & Writing	Asian	53	58	50	-8
	Black	45	50	40	-10
	Hispanic	40	44	45	1
	Native American	51	56	N/A	N/A
	Two or More Races	50	52.5	48	-4.5
	White	51	54	52	-2
	ELL	37	38	40	2
	Free/Reduced Lunch	42	44	42	-2
	Gifted & Talented	57	61	57	-4
	Students with IEPs	36	38	41	3

Math	Asian	64	58	55	-3
	Black	57	55.5	44.5	-11
	Hispanic	48	44	45	1
	Native American	55	57.5	N/A	N/A
	Two or More Races	45	57.5	54	-3.5
	White	57	55	55	0
	ELL	45	37	41	4
	Free/Reduced Lunch	48	42	44	2
	Gifted & Talented	57	61	61	0
	Students with IEPs	48	35	38	3

COMPLIANCE STATEMENT:

The District's performance during the monitoring period has partially complied with the standard as 57.6% (38 of 66) of groups and subgroups demonstrated growth at or above average compared to peers either across Colorado or across the nation. It is anticipated that the District's performance will comply with the standard for the 2023-24 school year given ongoing UIP improvement efforts and a renewed focus on progress monitoring and sound instruction aligned to grade-level standards.

INTERPRETATION:

I interpret the following language:

Life Skills

Students shall have opportunities to develop and demonstrate independence, self-directed learning, creativity, problem-solving, adaptability, critical thinking, perseverance, global and cultural understanding and effective communication skills in order to successfully achieve their college, career and life aspirations

to mean:

Evidence shall be presented to demonstrate that students across all district schools are provided with opportunities to engage in complex demonstrations of learning aligned to multiple life skills including independence, self-directed learning, creativity, problem-solving, adaptability, critical thinking, perseverance, global and cultural understanding and effective communication skills. Those examples can be found in **Attachment A – Complex Demonstrations of Learning for 2023-24**.

COMPLIANCE STATEMENTS:

The District's performance during the monitoring period complied with the standard as the complex demonstrations in Attachment A provide evidence of the opportunity for students to demonstrate life skills at schools of all levels throughout the district.

The Board acknowledged receipt of a monitoring report as of November 15, 2023, for the period July 1, 2022 through June 30, 2023, of the Superintendent concerning Board Policy 1.1 Schooling and found the superintendent's interpretations were reasonable and supported by data that is relevant, justified and complete.