

I Spy Math Academy Planning Template

Content area integration for the first 9 weeks of school:

Mathematics; ELA; Science; Social Studies

Teacher: Alicia Ayala

Grade: 2nd

School: Nina Otero Community School

Big Idea for the first 9 weeks (Project-Based Idea)

The Story of the Sun, Earth, and Weather

I. What do you want your students to learn in math and LA?

Mathematics CCSS	ELA CCSS	CCSS (Social studies or Science)
<p>2.OA.B.2 Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.</p> <p>MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories.</p> <p>2.MD.B.6 Students will be able to represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.</p>	<p>Reading: Literature RL.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. RL.2.3 Describe how characters in a story respond to major events and challenges. RL.2.5 Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action.</p> <p>Reading: Informational Text RI.2.1 Ask and answer such questions as <i>who, what, where, when, why, and how</i> to demonstrate understanding of key details in a text. RI.2.5 Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently. RI.2.4 Determine the meaning of words and</p>	<p>NM Science Content Standards, Benchmarks, and Performance Standards</p> <p>Strand II: Content of Science</p> <p>Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.</p> <p>K-4 Benchmark I: Know the structure of the solar system and the objects in the universe.</p> <p>Grade 2 Performance Standards</p> <ol style="list-style-type: none"> 1. Observe that the phase of the moon appears a little different every day but looks the same again after about four weeks. 2. Observe that some objects in the night sky are brighter than others. 3. Know that the Sun is a star. <p>NM Social Studies K-4 Benchmark II-D: Understand how physical processes shape the Earth's surface patterns and biosystems.</p>

	<p>phrases in a text relevant to a <i>grade 2 topic or subject area</i>.</p> <p>RI.2.6 Identify the main purpose of a text, including what the author wants to answer, explain, or describe.</p> <p>Writing</p> <p>W.2.2 Write informative texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.</p> <p>W.2.3 Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure.</p> <p>W.2.5 With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.</p>	<p>2nd Grade</p> <p>Describe the physical processes that affect the Earth's features (e.g., weather, erosion).</p> <p>Second Step Grade 2 Unit 3</p> <p>Empathy & Kindness</p> <ol style="list-style-type: none"> 1. Take the point of view of a specific person by thinking about how they might feel. 2. Generate ways of showing kindness in different situations.
<p>Math Content Objectives</p> <p>Students will be able to fluently add and subtract within 20 using mental strategies.</p> <p>Students will be able to fluently add and subtract within 100.</p>	<p>ELA Content Objectives</p> <p>Students will be able to ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.</p> <p>Students will be able to describe how characters in a</p>	<p>Other Content Objectives</p> <p>Students will be able to identify the four seasons, describe why seasons happen, and describe how the Earth changes with each season.</p> <p>Students will be able to identify characters' different points of view in a story.</p> <p>Students will be able to empathize</p>

<p>Students will be able to create a bar graph to represent a data set.</p>	<p>story respond to major events and challenges.</p> <p>Students will be able to describe the structure of a story (beginning, middle, end).</p> <p>Students will be able to identify and use various text features to locate key details in a text.</p> <p>Students will be able to identify the main idea of a text.</p> <p>Students will be able to write a narrative where they recount events in sequence using transition words like first, second, then, and finally.</p> <p>Students will be able to write an informative piece with a clear introductory statement, facts and a concluding statement.</p> <p>Students will be able to write a narrative piece to recount an event in sequence.</p>	<p>with others and identify ways to show kindness.</p>
<p>Language Objectives</p> <p>Students will be able to read equations and write single digit addition and subtraction equations that are equal to a given number that is less than 20.</p> <p>Students will be able to orally explain how to use mental strategies when adding and subtracting using key, academic vocabulary in simple</p>	<p>Language Objectives</p> <p>Students will be able to orally ask and answer questions about the text using simple phrases and simple sentences with academic language.</p> <p>Students will be able to write individual and group responses to questions about the text using simple phrases and simple sentences in their</p>	<p>Language Objectives</p> <p>Students will be able to orally recite the names of the 8 planets in order from the Sun.</p> <p>Students will be able to create a model, book, or poster about the solar system with labeled planets.</p> <p>Students will be able to create a drawing of spring, summer, autumn, and winter with descriptive words about each season.</p>

<p>sentences.</p> <p>Students will be able to describe and explain orally and in writing how to draw a bar graph to represent and to solve simple problems using key vocabulary in a series of simple sentences.</p> <p>Students will be able to describe and explain orally and in writing how to create and partition a number line to represent whole numbers as equally spaced lengths on the number line using content vocabulary in simple sentences.</p>	<p>Reader's Response journals.</p> <p>Students will be able to complete a graphic organizer to identify the character traits of at least 2 characters in the text.</p> <p>Students will be able to create individual books based on the anchor text that have a table of contents, chapter headings, illustrations with captions, a glossary, and an index.</p>	<p>Students will be able to explain orally and in writing why the Earth has 4 seasons using academic language learned from the anchor text, classroom investigations, and classroom discussions.</p>
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II. Unit Theme

Essentials of the Lesson—The Content or the “what” of the lesson (What is the enduring understanding for the Lesson/Unit/Project?)

Students will learn that the Sun gives life to our planet. They will learn that the Sun is the central star in our solar system and how it affects life on Earth as our planet orbits around the Sun. They will learn the defining characteristics of each season and will compare temperatures/seasons around the world.

III. Materials

Resources

Part I.

- [The Planets](#) by Gail Gibbons (available in Epic)
- [The Moon Book](#) by Gail Gibbons (available in Epic)
- [The Moon in a Month](#) by Tracy Nelson Maurer (available in Epic)
- [How the Moon Regained Her Shape](#) by Janet Ruth Heller (available in Epic)
- [Planets song](#) (first song in the video)
- [Planets song for kids/Solar System Song](#) in Epic

Part II.

- [Trouble at the Sandbox](#) by Phillip Simpson (ReadyGen)
- [The Reasons for Seasons](#) by Gail Gibbons (Epic)

Part III.

- [Friends Around the World](#) by Ana Galan (ReadyGen)
- [Temperature](#) by Kristin Schuetz (Epic)
- [What is Weather?](#) by Robin Johnson (Epic)

Manipulatives

Small in-classroom sandbox with plastic/wooden numbers

Counting blocks

Unifix cubes

Place value blocks

Materials for activities:

Dig for treasure activity: plastic or wooden numbers, sandbox (plastic bin with sand)

Moon Craters Investigation: shoebox, sand, three different sized rocks, ruler

Virtual (https://docs.google.com/presentation/d/1jadIq9nk64U9gWtj4QEbd-AEzVtCXQeH-y44LPXIF3M/present?slide=id.g27b693dca5_0_261)

IV. Lesson Objectives ... Lesson Delivery

Strategies/activities: Identified and described

Part I. The Solar System

Week 1.

Day 1. Assessing student prior knowledge: What do students know about our solar system?

- Every student has some knowledge of our solar system. Ask students to record their personal observations and questions about our solar system in a KLEW chart. A student created KLEW chart is an excellent formative measure for ascertaining a student's prior knowledge and for guiding your instruction. Since this is the introductory activity to this unit of study, ask students to skip the L (What have I learned about our solar system?) column of the chart. Students should revisit their KLEW chart throughout the unit and as a culminating activity to document their learning.

K (What do I know about our solar system?)	L (What have I learned about our solar system?)	E (What evidence do I have to demonstrate what I know about our solar system?)	W (What am I wondering about our solar system?)

*This chart can be printed and given to students or inserted as a PDF file into a Seesaw assignment.

Class discussion

- Create a discussion parking lot. Give students a post-it note and ask students to post one fact that they know about the solar system.

Home/School Connection

- Ask students to interview one or two family members and ask them about what they know about the solar system. Give students a choice of summarizing their findings in a 5 sentence paragraph or drawing what their family members know about the solar system.

Day 2. Planet Song, Read Aloud, Number of the Day Math Assignment

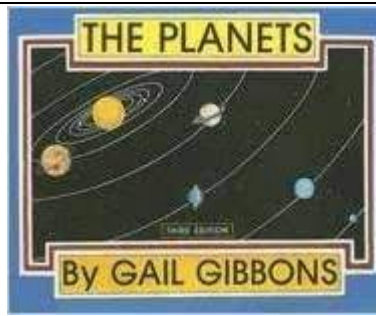
Planet Song

- Begin this day with a song about the planets. Several songs about the planets are available in Epic. The "[Planets song for kids/Solar System Song](#)" in Epic takes students on a journey through our solar system. Each planet presents itself and states important facts about itself. Ask students to listen to the song and pay attention to the graphics. Students can refer back to this song during independent study time. You can refer back to this song throughout the unit and ask students to sing the song as a group or they can volunteer to sing the part of a planet.
- Discuss the following with your class before listening to the song about the planets to activate prior student knowledge.
 - Our solar system is part of a galaxy called The Milky Way Galaxy and consists of 8 planets along with other space material orbiting our home star, the Sun. The 8 planets in our solar system are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

Read aloud: *The Planets* by Gail Gibbons

- Assign [The Planets](#) by Gail Gibbons in Epic. You can read the book to the students as they follow along. Since students can access the book in Epic they can refer back to the book during independent study.
- Begin an online word wall on Google Jamboard. Provide students with the link to the Google Jamboard so they can refer to it during independent assignments.
- Ask students to reread *The Planets* and answer the following questions. These questions can be printed and given to students or inserted as a PDF file into a Seesaw assignment. For differentiation, you can ask students to only answer half of the questions.

***The Planets* by Gail Gibbons: 20 Questions**



Read *The Planets* in Epic. Answer the following questions with a complete sentence. Write the page number of the page in *The Planets* where you found the answer. The first question is answered for you as an example.

1. What do we call a scientist who studies the planets and the stars?

A scientist that studies the planets and the stars is an astronomer. I found this answer on page 30.

2. Why can we see the planets in space?
3. How many planets are there in our solar system?
4. What does the word 'solar' mean?
5. What is the path that a planet follows around the Sun called?
6. What instrument do people use to see faraway planets like Uranus and Neptune?
7. What is the planet closest to the Sun?
8. What is the smallest planet?
9. What is the biggest planet?
10. Which planets have rings?
11. What is the second planet from the Sun?
12. Why is Venus bright?
13. How far is Earth from the Sun?
14. How many days does it take for Earth to complete one orbit around the Sun?
15. What is a Moon?
16. Why is Mars red?
17. How many moons does Jupiter have?
18. Which planet has the largest rings?
19. What is the seventh planet from the Sun?
20. Why does Neptune appear to be blue?

Math (Number of the Day): Equations that are equal to the number 8 (to reinforce the concept that there are 8 planets in our solar system)

- Reinforce that our solar system has 8 planets by highlighting the number 8 in a math assignment. For this assignment, tell students that 8 is the number of the day. Ask students to write 15 equations that are equal to the number 8.
- Review the definition of an equation and a number sentence.

- Second grade students can write addition and subtraction equations. This assignment allows for differentiation as well as formative assessment. Some students may be working with basic addition and subtraction facts, one and two digit numbers. Some may be ready to write addition and subtraction equations with three digit numbers.
- Third grade students can write addition and subtraction equations, multiplication equations and may be ready to try basic division equations. Some students may be working with basic addition and subtraction facts while others may be ready to write addition and subtraction equations with three digit or four digit numbers. Third graders may also be willing to try multiplication and division equations depending on the time of the instructional year.
- This can be used as a diagnostic assessment throughout the year to analyze student error patterns to help guide your small group intervention instruction.

Example equations for 2nd grade students		
On grade level equations		Challenge Equations
$2 + 6 = 8$	$10 - 2 = 8$	$98 - 90 = 8$
$7 + 1 = 8$	$12 - 4 = 8$	$108 - 100 = 8$
$5 + 3 = 8$	$11 - 3 = 8$	$158 - 150 = 8$

Day 3. Planet facts table

Planet Facts Table

- Discuss facts about each individual planet with students. Refer to *The Planets* by Gail Gibbons and to the planet song that students listened to on Day 2. Encourage students to reread the book and listen to the song again in Epic. Both are excellent sources of information for this assignment.
- Instruct students to select three planets and fill in the following table with facts about the three planets.

Our Solar System: Planet Facts						
Planet Name	Numerical order from the Sun (Example: Mars is the fourth planet from the Sun)	How far is this planet from the Sun?	What is the temperature of this planet (hot, cold	How many moons does this planet have?	How many days does it take to complete one orbit around the Sun?	What makes this planet different from the other planets?

	the Sun.)	(miles)	or just right for life)?			

*This chart can be printed and given to students or inserted as a PDF file into a Seesaw assignment.

Week 2.

Day 1. Informative Writing and Bar Graph Math Assignment

Informative Writing

- Ask students to refer to the table that they filled out on Day 3 with facts about 3 planets. Instruct them to select one planet and write an informative text about that planet.
- Students must write at least one five-sentence paragraph about the planet they selected. Remind students to write complete sentences and to be mindful of punctuation and spelling.
- Provide a word bank for students to scaffold the use of academic language in their writing. Student's writing should have at least 8 of the words from the word bank.

Informative Writing Word Bank					
moon	days	orbit	atmosphere	surface	temperature
rings	miles	gases	solar system	rocky	life

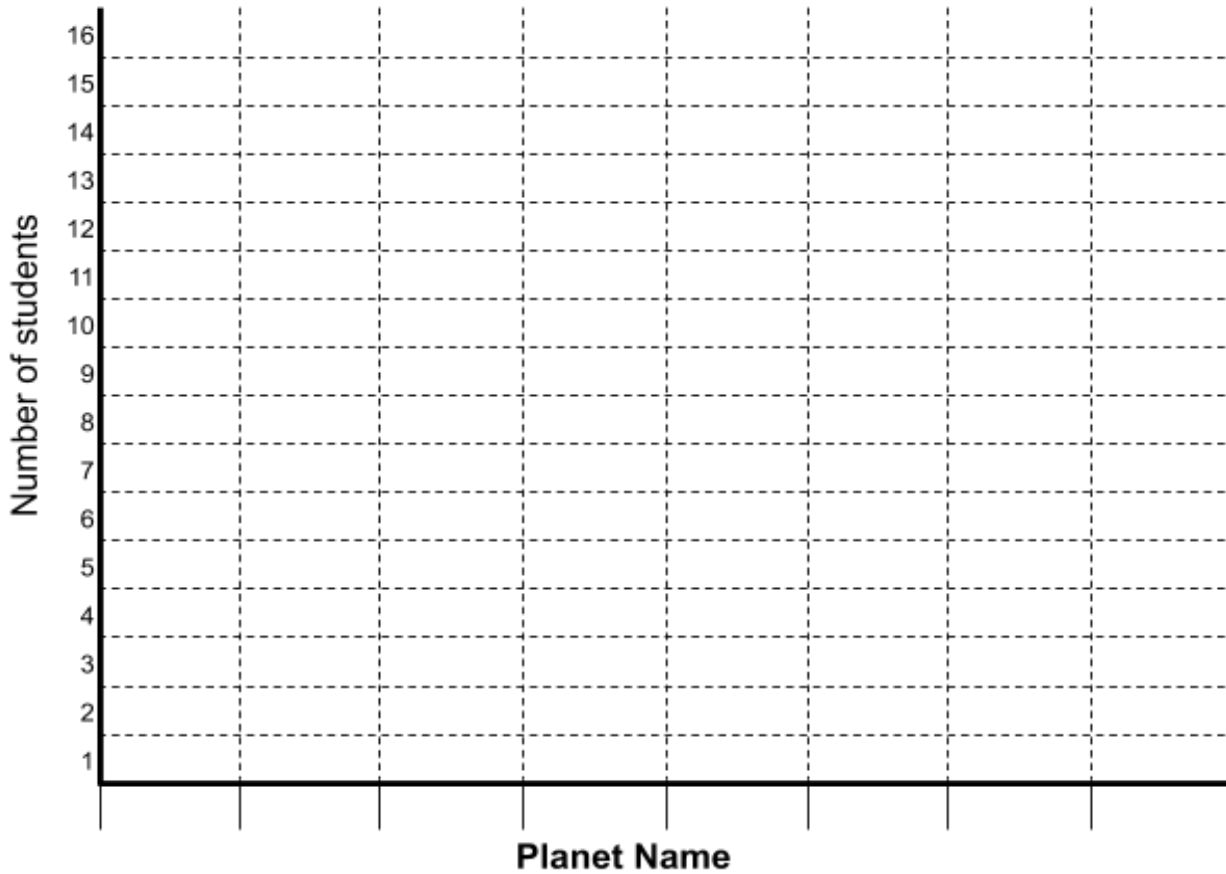
Math: Class discussion question and favorite planet bar graph

- Set up a discussion with this question: Which is your favorite planet? This can be a whole group discussion in class or can be set up as a discussion in an online learning platform. The online discussion can be set up to allow students to view all responses.
- Ask students to use tally marks to record how many times a particular planet is selected and then use their data to make a bar graph of the favorite planets.
- The "Which is your favorite planet?" tally mark table and bar graph can be printed and given to students or inserted as a PDF file into a Seesaw assignment.

Planet	Tally Marks
Mercury	
Venus	

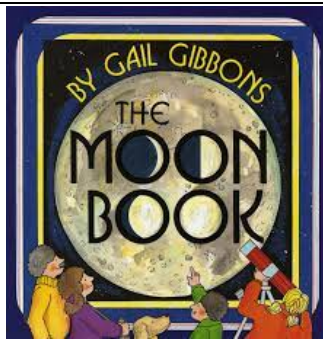
Earth	
Mars	
Jupiter	
Saturn	
Uranus	
Neptune	

Which is your favorite planet?



Day 2. The Moon: Read aloud, Moon Milestones Timeline, Homework

The Moon Book by Gail Gibbons read aloud



- Ask students what they know about the Moon.
- Tell students that the Moon is Earth's natural satellite.
- Read [The Moon Book](#) by Gail Gibbons in Epic. Students follow along.
- Tell students to pay special attention to page 30 Moon Milestones. Tell students that they will make a timeline of Moon Milestones. Explain to students that a timeline is a number line with important dates. Ask students to select 5 Moon Milestones and fill in the timeline template. This timeline can be printed and given to students or inserted as a PDF file into a Seesaw assignment. Students can also make a list, in chronological order, of 5 important Moon events.

Moon Milestones Timeline

The image shows a timeline template. It consists of a horizontal line with five rectangular boxes connected to it by vertical lines. The boxes are arranged in two rows: three boxes are positioned above the horizontal line, and two boxes are positioned below it. The boxes are empty, intended for students to write in Moon milestones.

Home/School Connection

- Find an image of the Moon. Draw the Moon. Include the details you see on the surface of the Moon.
- Go outside and observe the Moon. Draw what you see. Write two complete sentences to describe what you observe.

Day 3. At home investigation: Phases of the Moon



- Read [The Moon in a Month](#) by Tracy Nelson in Epic. Students follow along.
- Discuss the phases of the Moon with your students. Ask them to create the phases of the Moon with materials they have at home. This can be assigned as a homework project for the week.

Students can draw and label the phases of the Moon.



They can also use construction paper to make the phases of the Moon.



Students should create 8 Moon phases:

1. New Moon
2. Waxing Crescent
3. First Quarter (or Half) Moon
4. Waxing Gibbous
5. Full Moon
6. Waning Gibbous
7. Third Quarter Moon
8. Waning Crescent

Home School/Connection

- Go outside and observe the Moon. Draw what you see. Write two complete sentences to describe what you observe.

Week 3.

Day 1 and Day 2. Science Investigation: Craters on the Moon

Watch this 5 minute video with your students: [Moon Craters Investigation](#). The video presents the concept of craters on the Moon and gives students instructions for carrying out the investigation. Students can work on this investigation in small groups.

Materials: shoebox, sand, three different sized rocks, ruler

Investigation:

1. Fill the shoebox with sand. The sand should be about 3 inches deep. Use your ruler to measure how deep the sand is.
2. Smooth out the sand with your hand to create a flat surface.
3. Use your ruler to measure three feet above the sand.
4. Hold a rock three feet above the sand and drop it into the sand.
5. Observe what happens to the sand.
6. Repeat with the medium and the large rock. Record your observations.
7. Ask students what they observe once the rock hits the sand in the box. Make a table like the one below for students to fill in. Students record their observations after they drop each different sized rock into the sand.
8. Conduct a meaning-making circle with your students to allow them to share their observations. Ask students to analyze the information in their tables.

Lead the discussion starting with, what happened and why did this happen?

Is there a pattern to how craters form?

Do larger objects make deeper craters?

Do smaller objects make craters that are more shallow?

How did the craters on the Moon form? (Asteroids hit the surface of the Moon to form the craters.)

Object	Size (small, medium, largest)	Describe what happened and why you think it happened	Drawing of the crater	Size of the crater (inches)
Rock 1				
Rock 2				
Rock 3				

*This chart can be printed and given to students or inserted as a PDF file into a Seesaw assignment.

Home School/Connection

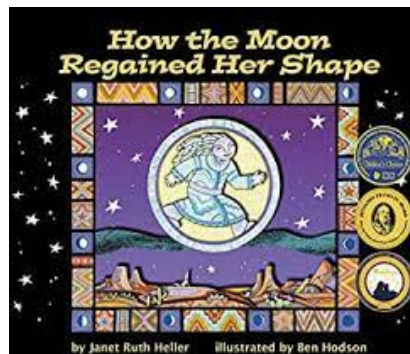
- Go outside and observe the Moon. Draw what you see. Write two complete sentences to describe what you observe.

Day 3. Legend about the Moon

Read aloud and independent reading

- Begin by referring to page 31 Moon Legends and Stories in *The Moon Book* by Gail Gibbons. Tell students that humans have always been fascinated and puzzled by our Moon so there are many legends and stories about the Moon. Tell them that they will be reading a legend about the Moon.
- Assign [*How the Moon Regained Her Shape*](#) by Janet Ruth Heller in Epic. This book is also available in Spanish. It recounts the legend of how the Sun bullied the Moon and the Moon got so upset that it disappeared from the sky. The Moon's friends help her to regain her self-confidence and reappear in the sky.
- Read the book with your students or assign it as independent reading. Differentiation: class read aloud, small group, independent reading
- Ask students to retell the legend in their own words. Alternatively, you can print or copy the following sentences and ask students to arrange the events in sequence as they happened in the story.

How the Moon Regained Her Shape: Sequence of Events



1. Now if someone hurts her feelings and she dwindles, she always remembers her friends and regains her strength and fullness.
2. Once the moon was round and full.
3. The moon visited Round Arms on Earth.
4. The moon felt better and regained her self-confidence.
5. Round Arms showed her how the people and animals loved and missed her.
6. One day she danced across the face of the sun and the sun yelled at her.
7. The moon danced and sang all the way back to her sky path.
8. The moon's feelings were hurt and she began to shrink until she was a sliver of her former self.

Home/School Connection

Go outside and observe the Moon. Draw what you see. Write two complete sentences to describe what you observe.

Day 4. Solar System Project

Assign a solar system project as a final activity for this part of the unit. Allow students one week to complete a project of their choice from the choice board below.

Solar System Project Choice Board

Choose one of the following projects. You can use any of the books that we read in Epic to research information for your project. Be creative and remember to use recycled materials from your home to complete your project.

Create a 3D model of the solar system. Be sure to label each planet. BE CREATIVE!



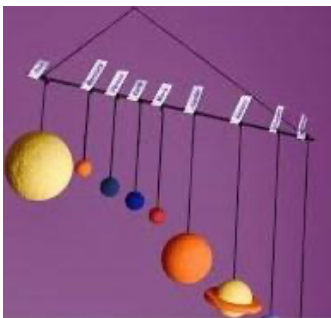
Create a solar system poster. Make sure it is neat. Show the orbits of the planets.



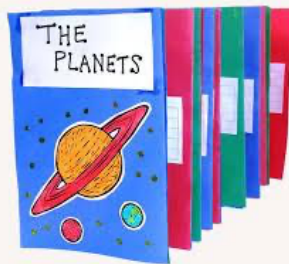
Choose one planet that has more than one moon. Create a 3D model of the planet and its moons.



Create a solar system mobile. This can be made using a clothes hanger.



Create a solar system book, with a different planet and fact on each page of the book.



Research 2 constellations. Create a constellation poster.



Part II. The Seasons

Week 4.

Day 1: Assessing prior student knowledge and experience: Have students experienced playing in a sandbox?

- Ask students to think about their summer vacation and recall where they played. Ask students if they have any memories of playing in a sandbox? Do you have a sandbox at home or did you go to a park? How did you feel? What was the weather like? Were other children playing with you?
- Students write a short narrative to recount their experience playing in a sandbox. They will use sequence words in their narrative.

Day 2: Making predictions & Anchor chart

ELA

- Introduce [*Trouble at the Sandbox*](#) by Phillip Simpson and direct students' attention to the cover illustration and the table of contents.



- Ask students to think about the title of the book and make predictions about what they predict the book will be about. Allow students time to write their predictions about the book in their Reader's Response journal and then share their predictions with the class.
- Start reading the book with the class (whole group).
- Read Chapter 1 and guide students to identify the characters, the setting, the events and the problem. Bring student's attention to the first line of Chapter 1: *It was hot in the sandbox. Really hot.* Ask students to write this sentence in their Reader's Response journal. You will refer to this opening sentence in Week 5 Day 2 and ask students to make inferences about what season the story takes place in.
- Continue reading Chapter 2.
- Create an anchor chart of the book identifying the characters, setting, events and problem. Students recreate the anchor chart in their Reading Response notebooks.

Math

- Review the definition of an equation with students and write example one-digit addition equations on the board with the help of students.
- Introduce and model the "Dig for Numbers" activity. In this activity, students will dig for numbers in a sandbox (any container with sand) and write single digit addition equations with the numbers.
- Students work independently or in pairs to dig for numbers in the sandbox. They write 10 single-digit addition equations with numbers they find in the sandbox in their math notebooks.

Day 3: Continue reading *Trouble at the Sandbox* & Partner Reading

ELA

- Read Chapters 3 and 4 and guide students to identify what they have learned about the characters, how the setting has changed, and how the problem has evolved. Add details to the anchor chart.
- Students initially read along with the teacher. Then they reread Chapters 3 and 4 with a partner.
- Then they summarize what happened in Chapters 3 and 4 in their Reader's Response notebooks using complete sentences and drawings.

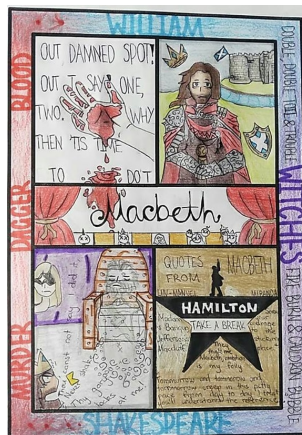
Math

- Review the definition of an equation with students and write example one-digit subtraction equations on the board with the help of students. Review the "Dig for Numbers" activity. In this activity, students dig for numbers in a sandbox (any container with sand) and write single digit subtraction equations with the numbers.
- Students work independently or in pairs to dig for numbers in a sandbox. They write 10 single-digit subtraction equations with numbers they find in the sandbox in their math notebooks.

Week 5.

Day 1. Finish reading *Trouble at the Sandbox* & Make Inferences

- Read chapter 6 and guide students to identify how the character's point of view changes from the beginning of the book to the end.
- Students complete a one pager to summarize the story. A one pager is an AVID strategy that gives students the opportunity to summarize a story or topic with words and art. Here are two sample one pager templates. Their one pager must list the characters and at least one trait of each, the setting, a short summary of the story (2 or 3 sentences), and important vocabulary from the story.



Day 2. Making inferences using context clues, word wall, and "What is your favorite season of the year" bar graph

- Ask students to orally list the sequence of events in *Trouble at the Sandbox*.
- Tell students to go to the first page of the book and reread the first line: *It was hot in the sandbox. Really hot.*
- Ask students to make an inference about what season it is based on the first line of Chapter 1. Pose the question: If it is very hot, what season is it? Allow them to conference with their elbow partner if necessary.
- Accept all student responses. Once students identify the season as summer, ask them how many seasons there are and have them name the four seasons.

- Ask students to think of words that are related to the seasons. You can ask them to think of colors that they see in each season, whether the season is hot or cold and if the season is rainy, snowy or sunny. Begin a word wall.
- Ask students to draw their favorite season, making sure that their drawing includes the colors that they see in the season. Ask them to write 3 sentences about the season. You can create an assignment in Seesaw that allows students to submit their work as a drawing with text to accommodate this assignment.

Math: Class discussion question and favorite season bar graph

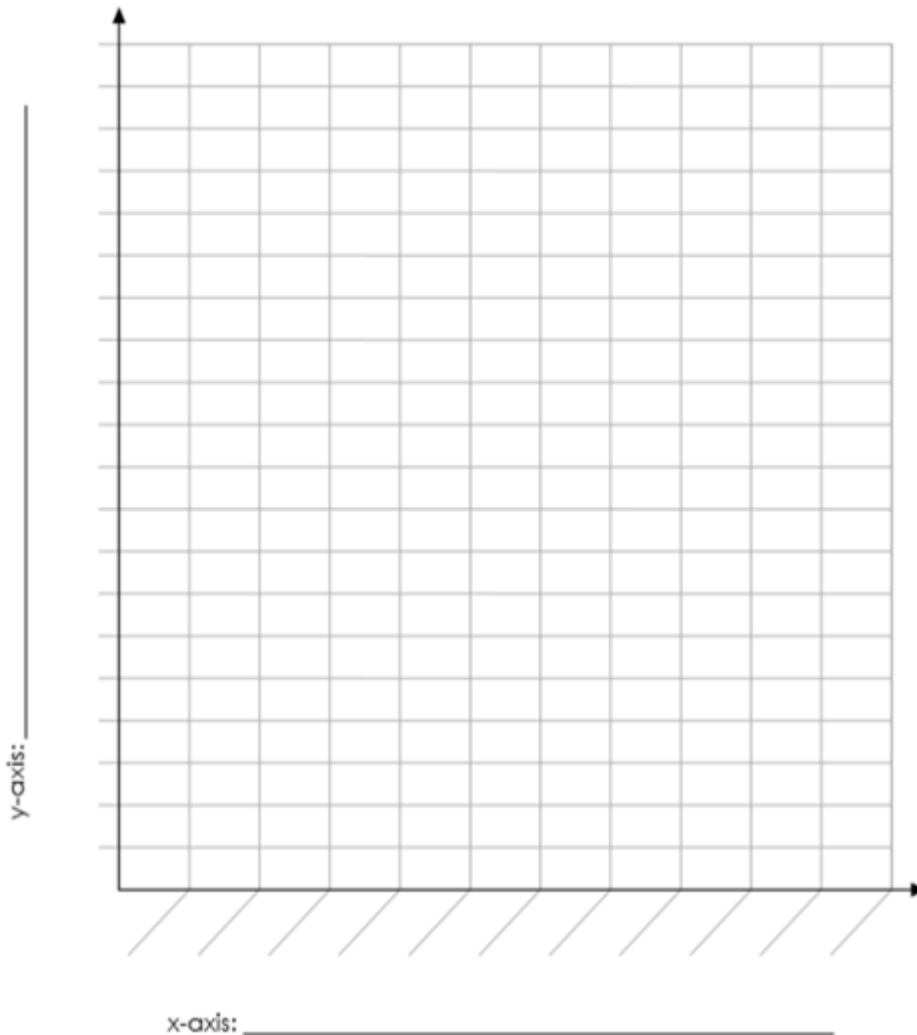
- Ask students to share their favorite season drawings and sentences.
- Create a tally mark table as a class to keep track of the number of votes for each season.
- Students use the tally mark data to make a bar graph.
- The "Which is your favorite season of the year?" tally mark table and bar graph can be printed and given to students or inserted as a PDF file into a Seesaw assignment.

Home/School Connection

- Ask students to interview one or two family members and ask them why we have 4 different seasons on Earth. Give students a choice of summarizing their findings in a 5 sentence paragraph or drawing what their family members know about what causes the seasons.

Season	Tally Marks
Spring	
Summer	
Autumn	
Winter	

Title: _____



Day 3. Seasons Chant, Read Aloud, Number of the Day Math Assignment

- Begin this day with a group chant about the seasons. A sample chant is given below or you can write your own. Recite the chant daily with your students.
- Ask students to recite the chant with you. Students can add movement to the chant to highlight what is being said about each season. You can refer back to this chant throughout the unit and ask students to recite the chant as a group or they can volunteer to recite the part of a season.

Seasons of the Year (to the tune of "Here We Go Round the Mulberry Bush) by Meish Goldish

Here we go round the year again,
The year again, the year again.

Here we go round the year again,
To greet the different seasons.

Wintertime is time for snow.

To the south, the birds will go.
It's too cold for plants to grow.
Because it is winter.

In the springtime, days grow warm.
On the plants, the new buds form.
Bees and bugs come out to swarm
Because it is spring.

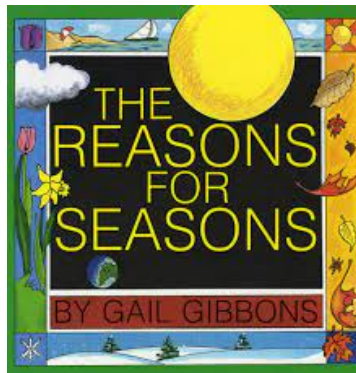
In summertime, the days are hot.
Ice cold drinks, I drink a lot!

At the beach, I've got a spot
Because it is the summer.

Fall is here, the air is cool.
Days are short, it's back to school.
Raking leaves is now the rule.
Because it is autumn.

Here we go round the year again,
The year again, the year again.

Read aloud: *The Reasons for Seasons* by Gail Gibbons



- Assign [The Reasons for Seasons by Gail Gibbons](#) in Epic. You can read the book to the students as they follow along. Since students can access the book in Epic they can refer back to the book during independent study.
- Refer to your word wall. Ask students to pick important words from *The Reasons for Seasons* and add these to your word wall.
- Ask students to reread *The Reasons for Seasons* and answer the following questions. These questions can be printed and given to students or inserted as a PDF file into a Seesaw assignment. For differentiation, you can ask students to only answer half of the questions.

The Reasons for Seasons by Gail Gibbons

Read *The Reasons for Seasons* in Epic. Answer the following questions with a complete sentence. Write the page number of the page in *The Reasons for Seasons* where you found the answer. The first question is answered for you as an example.

1. What are the four seasons of the year?

The four seasons of the year are spring, summer, autumn and winter. I found this answer on page 1.

2. How long does each season last?
3. The _____ of the Earth is what causes the seasons.
4. What does tilt mean?
5. How long does it take for Earth to make one complete trip around the Sun?
6. What is the part of the Earth that is north of the equator called?
7. What is the part of the Earth that is south of the equator called?
8. What season is it in the Northern Hemisphere when it is summer in the Southern Hemisphere?
9. What is the first day of spring called?
10. Write one fact about spring.
11. When is the first day of summer and what is it called?
12. What day is the longest day of the year?
13. Are nights shorter or longer during the summer?
14. When is the first day of autumn? What is another name for autumn?
15. In autumn, the days grow _____ and the nights become _____.
16. What day is the shortest day of the year?

Math (Number of the Day): Equations that are equal to the number 4 (to reinforce the concept that there are 4 seasons in a year)

- Reinforce that there are 4 seasons in a year by highlighting the number 4 in a math assignment. For this assignment, tell students that 4 is the number of the day. Ask students to write 10 equations that are equal to the number 4.
- Review the definition of an equation and a number sentence.
- Students can write addition and subtraction equations. This assignment allows for differentiation as well as formative assessment. Some students may be working with basic addition and subtraction facts, 1 and 2 digit numbers. Some may be ready to write 3 digit addition and subtraction equations.
- This can be used as a diagnostic assessment throughout the year to analyze student error patterns to help guide your small group intervention instruction.

Example equations for 2nd grade students	
On grade level equations	Challenge Equations

$2 + 2 = 4$	$6 - 2 = 4$	$98 - 94 = 8$
$3 + 1 = 4$	$8 - 4 = 4$	$108 - 104 = 8$
$4 + 0 = 4$	$7 - 3 = 4$	$158 - 154 = 8$

Week 6

Day 1. *The Reasons for the Seasons*: Text dependent questions

- Ask students to refer to pages 3,4,5 and 6 in *The Reasons for Seasons*. Review the diagrams with your students. Discuss these facts with your students:
 - The sun warms the surface of Earth.
 - The tilt of Earth in relation to the sun changes throughout the year.
 - The tilt of the Earth causes the seasons to change.
 - Each season lasts about 3 months.
 - Earth has 4 different seasons in a year.
 - It takes one year for Earth to make one trip, or orbit, around the sun.
 - As Earth goes around the sun, different parts of Earth are closer to the sun because of the Earth's tilt. This affects the amount of sunlight and heat they receive.
- Arrange students in small groups and have them act out the orbit of the Earth around the Sun. Make sure that their reenactment of Earth around the Sun shows the tilt of the Earth in relation to the Sun.
- Assign the following questions.
 - What affects the amount of sunlight and heat that we get?**

The Earth's tilt affects the amount of sunlight and heat that we get. As the Earth circles around the sun, different parts of Earth are closer to the sun than others.

- What happens when the North Pole is tipped toward the Sun?**

When the North Pole is tipped toward the Sun, the South Pole is tipped away from the Sun. It is summer in the Northern Hemisphere and winter in the Southern Hemisphere.

- What happens when the North Pole is tipped away from the Sun?**

When the North Pole is tipped away from the Sun, the South Pole is tipped toward the Sun. It is winter in the Northern Hemisphere and summer in the Southern Hemisphere.

Day 2. *The Reasons for Seasons*: Question of the Day

- Ask students to refer to pages 5 and 6 in *The Reasons for Seasons*. Review the diagram with your students. Review the vocabulary and the motion of the Earth around the Sun. Tell students to focus on the last sentence on page 6.

The last sentence on page 6 says:

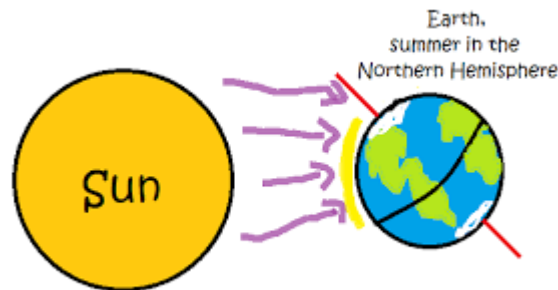
The seasons of one hemisphere are always opposite of those in the other hemisphere.

- Assign the question of the day. Tell students that they need to answer the question in writing and with a diagram showing the Earth's orbit around the Sun.

Question of the Day

The last sentence on page 6 in *The Reasons for Seasons* says:

"The seasons of one hemisphere are always opposite of those in the other hemisphere."



What does this mean?

- Cite evidence from *The Reasons for Seasons* to explain why this is true.
- Include a diagram with your explanation to help you answer this question.

Day 3.

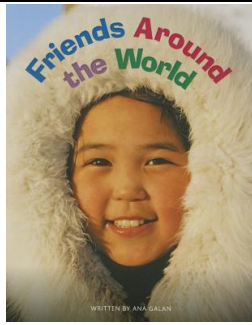
- Start with the Seasons chant from Week 5. Day 3.
- Review the seasons and the concept that **"The seasons of one hemisphere are always opposite of those in the other hemisphere."**

Part III. Friends Around the World & Weather

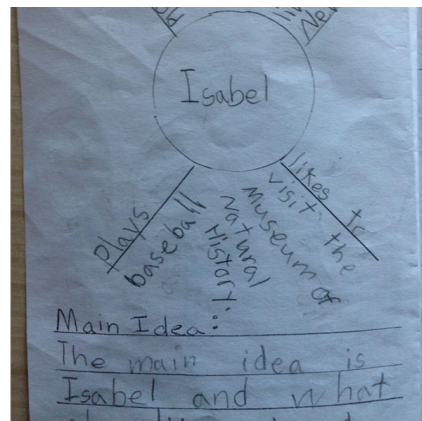
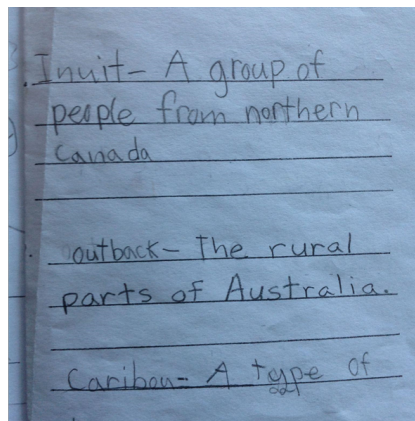
Week 7.

Day 1. Read aloud and Student created book

- Introduce *Friends Around the World* by Ana Galan and direct students' attention to the cover illustration and the table of contents. [Click here for the YouTube read aloud.](#)



- Ask students to think about the title of the book and make predictions about what they predict the book will be about. Allow students time to write their predictions about the book in their Reader's Response journal and then share their predictions with the class.
- Review the table of contents with students.
- Start reading the book with the class (whole group). Read pages 4-7. Tell students that you will be learning how readers identify the main topic of a text.
- After reading, ask students to discuss this question with a partner: Who is Isabel, and what did we learn about her in the pages we read?
- Tell students that text features can give important facts about the main idea.
- Identify the text features on pages 4 and 5, a map of the world and boxes with information about the children in the book.
- Give each student their own blank *Friends Around the World* book. Prepare these ahead of time by folding three 8.5 in. by 11 in. sheets of paper in half and stapling them together to make a booklet. Students will create their own version of *Friends Around the World* with important text features.
- These are the pages in the student created book:
 - Cover with illustration
 - Table of Contents
 - One about Isabel with web organizer about Isabel and main idea
 - One about Hau with web organizer about Isabel and main idea
 - One about Akiak with web organizer about Isabel and main idea
 - One about Dan with web organizer about Isabel and main idea
 - One illustration with a caption (Students choose their favorite picture from the book and make their own drawing of it along with a caption.)
 - Glossary (Students include 4 words from the book that are new to them.)
 - Index
- Today students will illustrate the cover of their book, begin the table of contents and write what they learned about Isabel.



This is an example of a student created book.

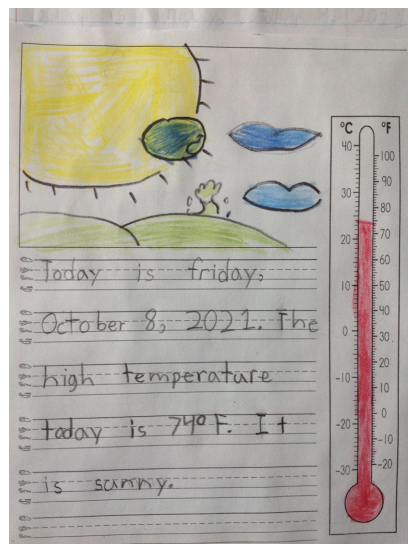
Day 2, 3 and 4. Student created book and introduction to daily weather

ELA

- Continue reading *Friends Around the World* with students. You will read about Isable's pen pals and learn about where they live and what they like to do. You can determine the best reading pace for your class. Students will likely be very interested in the book once they start learning about Isable's pen pals. Be sure to stop and compare/contrast where her pen pals live around the world.
- If time allows and if your students are ready, this is a great time to introduce a world map and lead into the continents.
- Students continue working on their *Friends Around the World* book after reading. They can fill in the pages about Isabel's pen pals, Hau, Akiak and Dan.

Math (Day 3 and 4)

- Ask students to recall key facts about Isabel and her pen pals. Ask them where each one of them lives.
- Locate these places on a map, either a physical map in the classroom or a map on the Smart Board.
- Tell students that they will be learning about weather around the world.
- Direct students to a website such as www.weather.com where they can check the weather for any place in the world. Also let them know that they can find the weather in a newspaper.
- Prior to this lesson, prepare a page for students where they can write about the weather, draw the weather, and fill in a thermometer with the high temperature of the day. Students will glue this page in their math journals. A sample student page is shown below.
- Go to www.weather.com and check the weather for your city. Have students complete the weather page for the day and glue it into their math journals.



Week 8. Write a letter to a pen pal and graph the daily high temperature in your city

ELA

Day 1, 2, and 3.

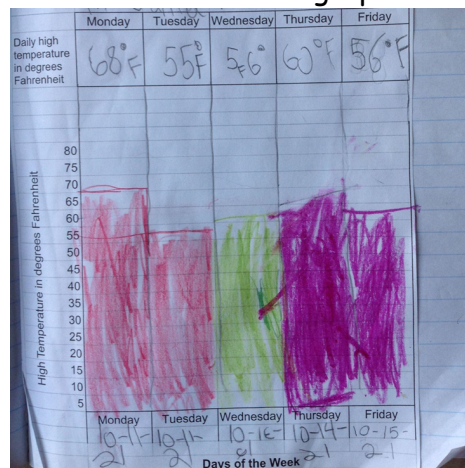
- Ask students to recall facts from *Friends Around the World*. Ask them about Isabel and her pen pals. Review facts about each one of them.

- Ask students to pick one of the children in the book and pretend that they are pen pals with that child. Have students write a letter to that child.
- Today students work on a rough draft of their letter. Students can work on their pen pal letter throughout the week. Students can reread *Friends Around the World* independently or with a partner if they need ideas to write their own letter.
- Introduce the book [What is Weather? by Robin Johnson](#) (Epic).
- Read this book with students in preparation for the math activities for this week and next where students will be checking the weather in their city and in other cities around the world.



Math (all week)

- Go to www.weather.com as a whole group each day to check the weather in your city for the day.
- Each day, students fill in a data table with the daily high temperature and fill in the bar graph for that day. A sample student data table and bar graph is shown below.



Week 9. Compare daily high temperatures around the world

Day 1 and 2.

ELA

- Introduce the book [Temperature by Kristin Schuetz](#) (Epic). Read this book with students to reinforce the concept of temperature and to introduce the term meteorologist and the idea of checking weather forecasts.



Math

- Ask students to recall the children from Friends Around the World, specifically where they live. Find these places on a map.
- Tell students that they will be comparing daily high temperatures around the world.
- Go to www.weather.com to find the daily high temperature in
 - Santa Fe, NM
 - New York City, NY
 - Ho Chi Minh City, Vietnam
 - Yellowknife, Canada
 - Northern Territory, Australia
- Students fill in a data table with the daily high temperature and complete a bar graph of daily high temperatures around the world. A sample student data table and bar graph is shown below.
- Students answer questions using the information given in the bar graph they created.
 - Arrange the daily high temperatures from least to greatest.
 - Compare the high temperatures in Santa Fe, NM and Yellowknife, Canada. Was the temperature lower in Santa Fe, NM or in Yellowknife, Canada?
 - Which city had the lowest temperature?
 - Which city had the highest temperature?

Use your data table and bar graph to answer these questions.

1. Arrange the daily high temperatures in order from least to greatest.

41°F, 72°F, 73°F, 86°F, 96°F

2. Compare the high temperatures for Santa Fe, NM and Yellowknife, Canada.

Which city had a higher temperature?

High Temperature in Santa Fe, NM 72°F

High Temperature in Yellowknife, Canada 41°F

Santa Fe had the higher temperature.

3. Which city had the lowest temperature?

Yellowknife had the lowest temperature.

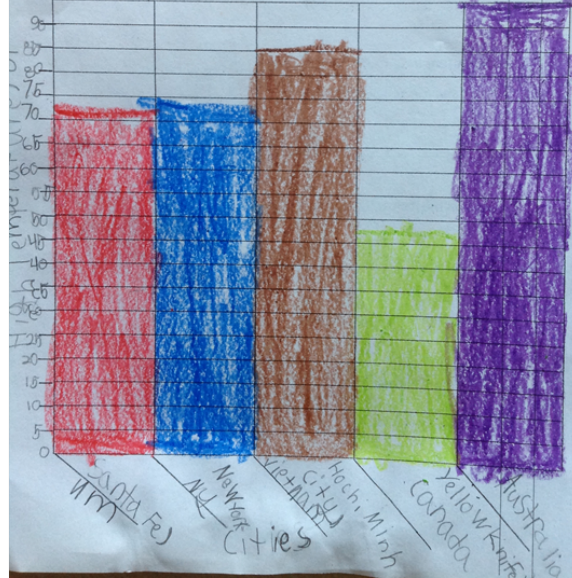
4. Which city had the highest temperature?

Australia had the highest temperature.

- Go to www.weather.com to find the high temperatures in 5 cities.
- Write the high temperatures in the table below.
- Make a bar graph of the high temperatures.

	Santa Fe, NM	New York City, NY	Ho Chi Minh City, Vietnam	Yellowknife, Canada	Northern Territory, Australia
High temperature in °F	72°F	73°F	86°F	41°F	96°F

Title: High Temperatures Around the World



Assessment/Evaluation (PLC Questions)

1. How will you know if each student has learned?

Part I. The Solar System (Weeks 1-3)

Students that have mastered the objectives will be able to:

- recite the names of the planets and identify at least two characteristics of each planet.
- explain that the Sun is a star not a planet.
- identify and describe the phases of the Moon.
- identify and use text features to find information in a text.
- independently write an informative piece about the planets.
- orally explain how to interpret a set of data and use the data to create a bar graph.
- write 10 equations (addition and subtraction) that are equal to the number 8.

Part II. The Seasons (Weeks 4-6)

Students that have mastered the objectives will be able to:

- identify the characters, setting, and sequence of events in a story.
- write a narrative to recount a sequence of events.
- identify how characters respond to events in a story.
- identify the four seasons and identify at least two characteristics about each season.

- explain why the seasons change every 3 months.
- identify and use text features to find information in a text.
- write at least 10 addition and subtraction equations with given numbers.

Part III. Friends Around the World and Weather

Students that have mastered the objectives will be able to:

- identify text features and use them to locate information in a text.
- identify the main idea of a text.
- create a booklet with text features (title, table of contents, chapter titles, illustrations and captions, glossary, index).
- read a thermometer in degrees Fahrenheit and color in a given temperature in degrees Fahrenheit in a thermometer.
- write two or three complete sentences to describe the weather on a given day.
- create a data table of daily temperatures and use the data table to create a bar graph.
- analyze a bar graph and data set to answer questions.
- explain that the Northern hemisphere and Southern hemisphere experience the seasons at different times of the year. (When it is summer in the Northern hemisphere, it is winter in the Southern hemisphere.)

2. What will you do when some students do not learn it (intervention strategies)?

Intervention strategies for students that do not learn the objectives include small group work/RTI with the teacher to further scaffold their learning using manipulatives, visuals and interactive activities/games to support vocabulary acquisition. Struggling students will also be given additional opportunities to read the text with the help of read-to-me options when available or one-on-one reading time with the teacher or classroom volunteer.

3. How can you extend the learning for students who have demonstrated proficiency?

Students that have demonstrated proficiency can extend their learning by engaging in independent research using various websites to research a space topic of their choice. They can also complete an additional project beyond what is assigned to the whole class and present the project to the class or another class in our grade level.

Reflective Questions

1. What do you hope to achieve with this lesson/unit/project?

I hope that students will gain a deeper understanding of the structure of our solar system and be able to identify the differences and similarities between the planets. I hope students will be able to explain the relationship between the Sun and Earth and that the cause of the seasons changing on Earth is the tilt of our planet. Also, I want students to understand that the weather is not the same in different places on Earth on the same day. I want students to be able to analyze weather data and extend this understanding to predictions about weather patterns.

2. What are the learning benefits of integrative teaching--math/ELA together and other content areas?

The learning benefits of integrating math, literacy, science, and social studies are the connections that students make across the curriculum. All subject areas merge to create a well rounded learning experience that promotes genuine, meaningful learning that students own and internalize.