PRINTABLE ACTIVITIES SAMPLER

FLORIDA
Cross-Curricular Connections

SAVVAS SCIENCE EXPLORATIONS™

SAVVAS

SAVVAS
LEARNING COMPANY

Cross-Curricular Connections

Printable Activities Sampler

A Note to Reviewers

Thank you for reviewing *Florida Savvas Science Explorations,* a new program developed for today's Florida science classroom. *Florida Savvas Science Explorations* is written specifically for Florida and meets 100% of the Florida State Academic Standards for Science. We are excited to partner with you to create an exceptional Elementary Science experience for your students and teachers.

This sampler contains one Topic's worth of the Cross-Curricular Activities that are available online only on Savvas Realize®. Provided here are the online annotated teacher pages as a sampler for your review. Student pages are available online.

The Cross-Curricular Activities are designed to help you integrate social studies and math instruction into your science lessons. Activities have been aligned to the science topics you currently teach as well as to holidays. All activities should take between 10-20 minutes so they can be easily incorporated into your lessons. Each activity includes support for differentiating instruction to meet the needs of all your learners. Available online as editable Microsoft Word® documents or Google Docs®, (and social studies lessons are also available as editable PowerPoints®). All activities are available to assign, edit, and or print directly from within Savvas Realize®.

Thank you, again, for your review of *Florida Savvas Science Explorations*!

Name_____

Evaluating Sources

You will…

- Examine sources related to Native American artifacts.
- Infer what each source is based on its properties.
- Think critically about the credibility of each source.

What You Need to Know

When investigating a source, it is important that you are aware of how credible it is. When determining credibility, think about the creator of the artifact: are they an expert? How do you know they are presenting accurate information?

Steps

1. **Examine the Sources** Look at each source. Describe it and its properties. What do you think it is? How credible is it?

Source 1

Photo Credit: Jennifer White Maxwell/Shutterstock

Name_____

What I think it is: Sample Answer: I think these are beads or jewels

Answer: Students should mark the credibility of the source.

Rank the credibility of Source 1						
not credible	1	2	3	4	5	most credible

Source 2

…is planted like our Hops in hills [illegible] feet dist[ance], 3 grains in an hill. The stalk grows often 10 or 12 feet high [and] yeilds a prodigious Increase. I have [been] told [there are] 12 Rows round an Ear and 46 grains in Each [row], which amount to[blank], and 3 such ears on one Stalk, making [blank]. Its Planted in March or April, but not ripe till October…

--William Hugh Grove, "The Travel Journal of William Hugh Grove," 1732

What I think it is: Sample Answer: I think this is describing a plant, maybe corn

Answer: Students should mark the credibility of the source

Rank the credibility of Source 2						
not credible	1	2	3	4	5	most credible

Text Credit: William Hugh Grove, Gregory A. Stiverson, and Patrick H. Butler III, "The Travel Journal of William Hugh Grove," Virginia Magazine of History and Biography 85, no. 1 (January 1977), 18–44.

Name_____

Source 3

My 4th grade class traveled to the history museum last year. We saw a Native American exhibit. There were a lot of interesting artifacts. One sticks out in my memory but I can't remember the name for it. It was made out of a beaver skin and cow hide and it was decorated with fringe. It had a pocket and a long strap. Some people might put medicine or herbs or stones inside to help protect them. They were carried close to the body and kept private.

What I think it is: Sample Answer I think this is a purse or pouch

Answer: Students should mark the credibility of the source

Rank the credibility of Source 3						
not credible	1	2	3	4	5	most credible

2. **Reflect** Which source is the most credible? Why do you think so? Did your classmates agree?

Sample Answer: I think Source 1 was the most credible because it is a picture of something that was made by the people who used it. Some classmates said Source 2 was most credible because there's no guarantee Source 1 was actually made by Native Americans. It could have been left by people later.

Text Credit: William Hugh Grove, Gregory A. Stiverson, and Patrick H. Butler III, "The Travel Journal of William Hugh Grove," Virginia Magazine of History and Biography 85, no. 1 (January 1977), 18–44.

Name_____

A Park Proposal

You will…

- Consider the pros and cons of various types of parks for your community.
- Participate in a discussion at a simulated community meeting.
- Give your recommendation to the City Council.

What You Need to Know

When you participate in a community discussion, your goal is to explain and defend your point of view. To be successful, you'll prepare for the conversation, present your position with an explanation, and listen to other viewpoints respectfully.

Steps

1. **Read the Notice**

NOTICE TO LOCAL RESIDENTS

Community to Consider New Park Proposal

Following the teardown of the Front Street Mall, the City Council is looking for input from community members. The land will be used for a park. City Council asks residents to voice their opinions about the type of park to be built.

City Council has suggested three options for using the land:

1) **Sports Complex** It would house fields for football, baseball, basketball, and soccer, along with a swimming pool and skate park.
2) **Nature Preserve** It would include trails and wildlife, a dog park, and a nature center.
3) **Gathering Place** It would have a stage for performances and concerts, pavilions for festivals and farmer's markets, and large playgrounds.

The City Council invites community members to share their thoughts about the new park. The community meeting is scheduled for next Thursday at 6:00 pm at the Community Center.

Name_____

2. Think Critically About Your Community Needs

Which option is most appealing to you? Why?

Sample Answer: A gathering place with playgrounds sounds like the most fun because I am always wanting to go somewhere to hang out with my friends.

Do you think this is the best choice for your community as a whole? Explain.

Sample Answer: We do have some parks with playgrounds but they have a lot of broken parts and they're not safe to ride my bike to. A new park would be safer and there would be a lot to do.

Which type of park will you recommend for City Council?

Answer: sports complex; nature preserve; gathering place.

Name_____

3. **Organize Your Thinking** Meet with a small group who chose the same option as you. Discuss your ideas and thinking.

Use the space below to organize your ideas. Be sure to include reasons and explanation to support your point of view.

Answer: Students should use this space to list their reasons and ideas.

4. **Participate in a Discussion** Be an active participant in the community meeting. When it's your turn to talk, speak clearly and make eye contact with your audience. When other people are talking, listen closely and be respectful of other groups' positions.

What is your recommendation to the City Council? Explain.

Sample Answer: We should have a nature preserve. Our community already has lots of places for sports and parks for gathering and playing. A nature preserve could also be used for recreation because people could play in the fields and could be used for gathering like an ice cream social in an open area. That way it could make everyone happy.

Name _____

enVision® STEM Activity 2-6

Koala

Did You Know? A koala, like all animals, is a consumer because it can't make its own food like a plant does. A koala, however, is unusual because it consumes just one type of plant. A koala eats only the leaves and bark of a eucalyptus tree. In fact, a koala may eat up to 1,000 grams of leaves each day, and it may spend up to five hours a day eating!

1. A koala ate 495.32 grams of eucalyptus leaves on Monday and 426.85 grams of leaves on Tuesday. How much more did the koala eat on Monday?

68.47 grams

2. How many total grams of eucalyptus leaves did the koala eat on Monday and Tuesday?

922.17 grams

3. Every 10 days, a koala may eat an amount of eucalyptus leaves equal to its body mass. Suppose the mass of a koala is 12.73 kilograms and it eats 11.58 kilograms of leaves during a 10-day period. How much more was the mass of the koala than the mass of the leaves it ate?

1.15 kilograms

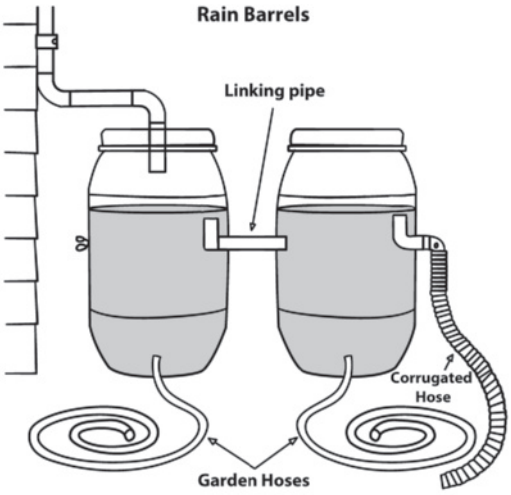
4. **Extension** Koalas rarely drink because they are able to get the water they need from eucalyptus leaves. Suppose a koala eats 624.15 grams of eucalyptus leaves one day and 586.03 grams of eucalyptus leaves the next day. If the leaves the koala ate on the two days contained a total of 415.07 grams of water, what was the mass of the parts of the leaves that were **not** water?

795.11 grams

Name _____

Collecting Rainwater

Did You Know? The largest rainfall ever recorded was 72 inches in 24 hours on Reunion Island in the Indian Ocean, in 1952. That's nearly 2 million gallons of water per acre of land. Even a typical thunderstorm can drop 1.5 inches of rain in less than an hour. That's over 40,700 gallons of water for every acre of land—or enough water to fill about a thousand bathtubs.



Rain barrels catch water that runs off a roof when it rains. Rainwater is good for watering lawns and gardens and washing cars. Some people connect rain barrels together. When the first barrel is full, the next barrel fills, and so on.

Amount of Rain Off a Roof from a Half-Inch Rainfall	408 gallons
Capacity of One Rain Barrel	60 gallons
Amount of Water Needed to Wash a Car Using Buckets of Water and a Sponge	20 gallons

Use the information in the table.

1. How many rain barrels does it take to catch all the rain that runs off a roof from a half-inch rainfall? Explain.

7 barrels; $408 \div 60 = 6\frac{48}{60}$

2. How many cars can you wash with one full rain barrel? Show your work.

3 cars; 60 gallons $\div$ 20 gallons $= 3$

3. **Extension** How many cars could you wash with the amount of rain collected from a half-inch rainfall? Explain.

20 cars; $408 \div 20 = 20\frac{8}{20}$. The remainder of $\frac{8}{20}$ isn't enough to wash another car.

Name _____

Electrical Energy

Did You Know? Static electricity occurs in nature. In a thundercloud, tiny bits of ice bump into each other to create an electrical charge. A lightning bolt is a discharge of electricity.

When you plug a lamp or a TV into a wall outlet, you complete an electrical circuit. This is called current electricity. It uses wires to provide a steady flow of electricity.

Electrical current is measured in amperes. Resistors are electrical devices that regulate the flow of electrical current. Resistance is calculated by dividing the voltage of electricity by the current.

1. How can you estimate the resistance?

Use compatible numbers to divide the voltage by the current.

2. Use estimation to complete the resistance column of the table.

Sample estimates are shown.

Resistor	Voltage (volts)	Current (amperes)	Resistance (ohms)
A	2,400	5	**About 500**
B	3,300	4	**About 800**
C	4,160	7	**About 600**
D	6,900	8	**About 900**

3. **Extension** Explain how you estimated the resistance measurement for Resistor D.

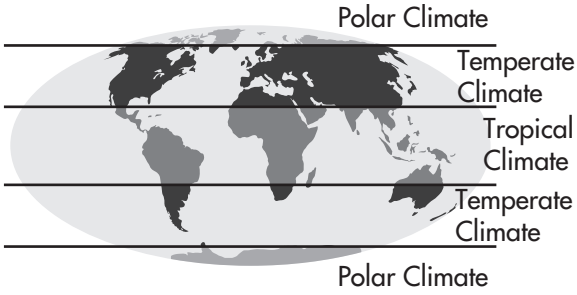
Sample answer: I considered the basic facts $8 \times 8 = 64$ and $8 \times 9 = 72$. Since 69 is closer to 72 than to 64, I used $7{,}200 \div 8$.

Name _____

enVision® STEM Activity 6-1

Zoning In

Did You Know? Climate describes what the weather is like over a long period of time. Different parts of the world have different climates. The polar zones located around the North and South Poles have very cold, dry climates. The tropical zone is hot and wet all year. The United States is in a temperate zone, so the weather is warm in the summer and cold in the winter. Snow is common in temperate climates.



Average Annual Snowfall	
Location	**Centimeters of Snow**
Niseko, Japan	1,524
Nagano, Japan	1,097
Alyeska, Alaska	1,005
Chamonix, France	975

1. Write the average annual snowfall for Niseko, Japan in expanded form.

   1,000 + 500 + 20 + 4

2. Which location has an average annual snowfall of one thousand, ninety-seven centimeters?

   Nagano, Japan

3. Write the number name for the average annual snowfall for Alyeska, Alaska.

   One thousand, five

4. **Extension** Write the number name and the expanded form for the average annual snowfall in Chamonix, France.

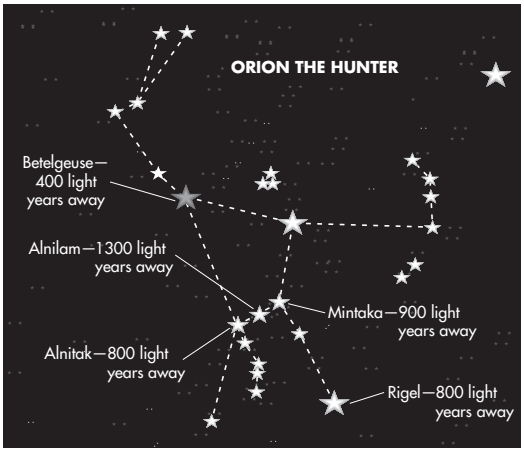
   Nine hundred seventy-five; 900 + 70 + 5

Name _____

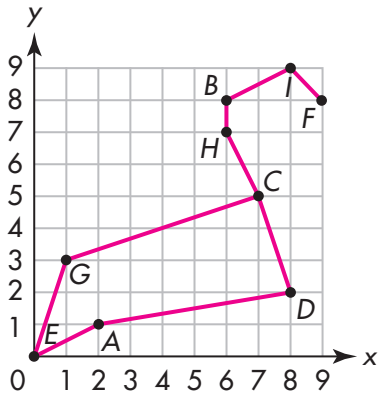
enVision® STEM Activity 7-1

Constellations

Did You Know? There are 88 recognized constellations in the entire sky. A constellation is a group of stars that, together, look like a person, an object, or an animal. Orion is a group of stars that the Greeks thought looked like a giant hunter with a sword attached to his belt. In fact, stars that make up a constellation may not be related to one another at all. To us, all stars appear to be the same distance from Earth, however some stars may be tens of millions of times farther away from Earth than other stars in the same constellation.



Desha is making a drawing of the constellation Leo on a coordinate plane.



1 Write the ordered pair for each point on the grid.

A (2 , 1) B (6 , 8)

C (7 , 5) D (8 , 2)

2 Name the point that is located at each ordered pair.

(1, 3) Point G (8, 9) Point I (9, 8) Point F

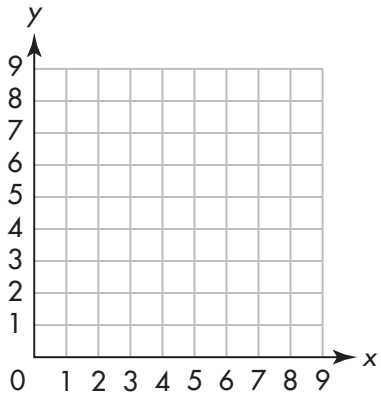
(6, 7) Point H (0, 0) Point E

3 Use a ruler to connect the points in this order: *F, I, B, H, C, D, A, E, G, C.*

Check students' work.

4 **Extension** Draw your own constellation on the grid. Name at least 6 points and give each point's coordinates.

Check students' work.



Name _____

Hearing

Did You Know? A sound wave is created by a vibrating object such as the vocal cords of a person, the strings on a guitar, or the prongs of a tuning fork. The frequency of a sound wave refers to the rate at which a vibration occurs and is measured in hertz. Different animals can hear different levels of frequencies. The highest frequency humans can hear is about 20,000 hertz. On the other hand, bats can hear frequencies of about 120,000 hertz. The highest frequency level a cat can hear is one half that of a bat. The table shows the highest frequency different animals can hear as a fraction of the highest frequency a bat can hear.

Animal	Highest Frequency (as a fraction of a bat's hearing)
Cat	$\frac{1}{2}$
Dog	$\frac{1}{3}$
Dolphin	$\frac{5}{6}$
Elephant	$\frac{1}{6}$
Grasshopper	$\frac{5}{12}$
Mouse	$\frac{10}{12}$

1. Which animal can hear a higher frequency, a cat or a dog? Explain.

Cat; $\frac{1}{2} > \frac{1}{3}$

2. Which animal can hear a higher frequency, a grasshopper or a dolphin? Show your work using equivalent fractions.

Dolphin; $\frac{5}{6} = \frac{10}{12}$ and $\frac{10}{12} > \frac{5}{12}$, so a dolphin can hear a higher frequency.

3. Which animal can hear a higher frequency, an elephant or a dog? Explain.

Dog; Sample answer: $\frac{1}{3} = \frac{2}{6}$ and $\frac{2}{6} > \frac{1}{6}$, so a dog can hear a higher frequency.

4. **Extension** Which two animals can hear the same level of frequency? Explain.

A mouse and a dolphin; $\frac{5}{6} = \frac{10}{12}$

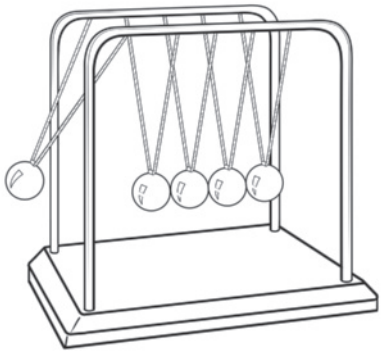
Name _____

enVision® STEM Activity 11-4

Newton's Cradle

Did You Know? The figure to the right is known as Newton's Cradle. It is a series of identical steel balls suspended from a frame. The steel balls are carefully aligned so that each one is just touching the steel balls on either side.

When the ball on one end is raised and released allowing it to swing, it collides with the next ball. The energy from the first ball is transferred through each of the steel balls so that the last ball will swing with the same speed as the first ball that was released.



The fourth-grade class performed an experiment using Newton's Cradle. Each group of students lifted the first ball to a different height and then recorded their observations. The table shows the starting heights of the first ball for each group.

Height	A	B	C	D	E
Decimeters (dm)	0.33	$\frac{3}{10}$	$\frac{44}{100}$	0.36	$\frac{39}{100}$

1. Write the height of the first ball for Group A as a fraction.

   $\frac{33}{100}$ dm

2. Write the height of the first ball for Group B as a decimal.

   0.3 dm

3. What is the combined height of the lift of the first ball for Group B and Group C? Show your work.

   $\frac{74}{100}$ dm; Sample answer: $\frac{3}{10} = \frac{30}{100}$; $\frac{30}{100} + \frac{44}{100} = \frac{74}{100}$

4. **Extension** Michael says that the combined height of the lift of the first ball for Group D and Group E is $\frac{75}{10}$. Do you agree? Explain.

   No; Sample answer: $0.36 = \frac{36}{100}$; $\frac{36}{100} + \frac{39}{100} = \frac{75}{100}$ dm

Name _____

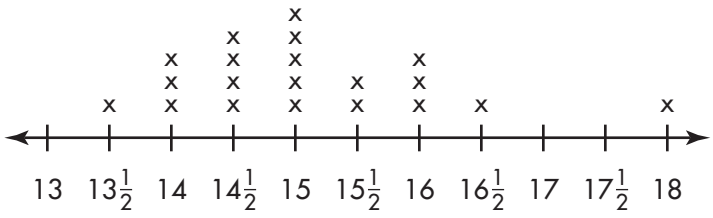
enVision® STEM Activity 12-1

Earthquake Resistant

Did You Know? During an earthquake, most destruction is due to buildings or structures collapsing. The material used to build a structure is one of the many factors to consider when building an earthquake-resistant structure. For example, wood and steel are better options because they are strong, yet flexible.

A construction company orders steel beams of various lengths. Each X on the line plot represents one steel beam the company ordered.

Lengths of Steel Beams



Yards

1. How many steel beams did the company order?

   20 steel beams

2. Which length is the most common?

   15 yards

3. How many more 16-yard beams than $13\frac{1}{2}$-yard beams did the company order?

   2 beams

4. How many steel beams are at least 15 yards long?

   12 beams

5. **Extension** The accounting clerk said that more than half of the steel beams ordered are less than 15 yards long. Do you agree? Explain.

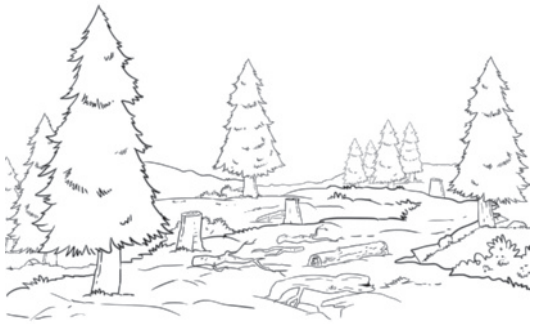
   No; Sample answer: One half of 20 is 10. Only 8 of the steel beams ordered have a length less than 15 yards.

Name _____

enVision® STEM Activity 12-3

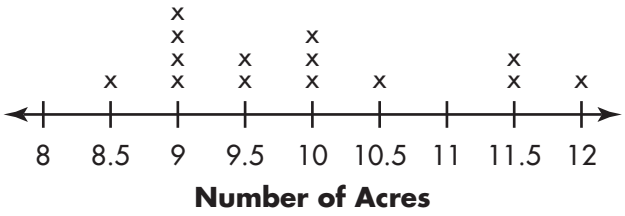
Deforestation

Did You Know? Many of Earth's forests have vanished because of *deforestation*. Deforestation is the removal of all trees in a forest. Humans clear forests for farming, grazing animals, lumber, paper products, and building towns. Deforestation changes the ecosystem. It damages and erodes soil. Deforestation causes a loss of homes and food for animals and plants. And, it affects the water cycle.



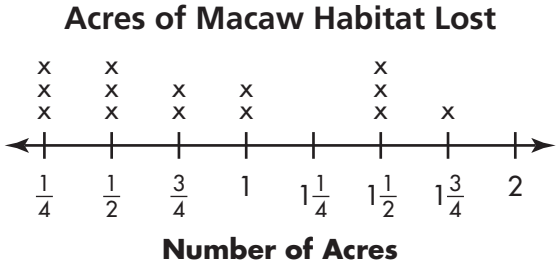
Answer the following questions using the line plots.

1 The *Clear-Away Tree Company* buys forestland, cuts down trees, and then sells the cleared land. They used a line plot to show the number of acres they cleared each day for two weeks. What was the greatest number of acres cut in one day? What was the least?



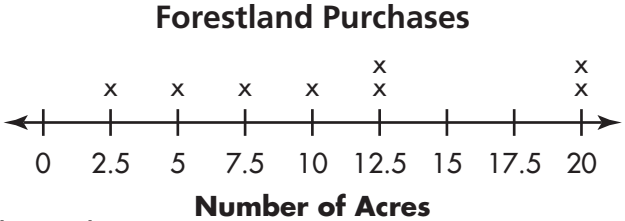
12 acres; 8.5 acres

2 Scientists want to know if clearing the forest affects a population of macaws. They measure the decrease in habitat area for 14 different macaw populations and make a line plot with the data. What is the smallest decrease in area? What is the greatest? Can you tell from the line plot how many macaws live in each habitat?



$\frac{1}{4}$ acre; $1\frac{3}{4}$ acre; no

3 **Extension** The *LuvTreez* organization works to prevent deforestation. They buy acres of forestland that they turn into protected parks. Every time they make a purchase, they record it. The line plot shows the data. How many purchases have they made so far? What is the total number of acres purchased?



8 purchases; 90 acres

Name _____

enVision® STEM Activity 12-4

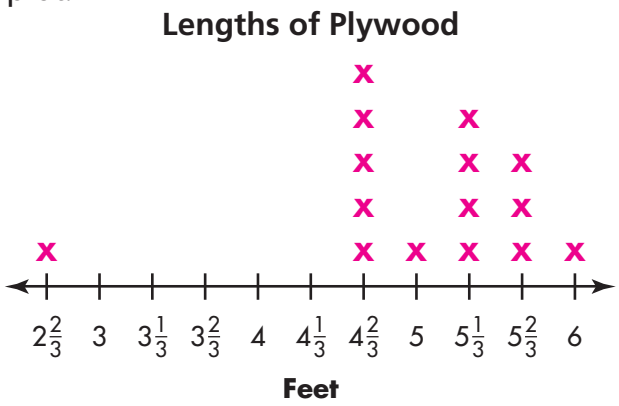
Hurricane Protection

Did You Know? The Federal Emergency Management Agency released a brochure containing tips on how to protect your home from hurricane wind damage. The brochure advises homeowners to focus on four main areas—the roof, windows, doors, and garage door. To protect windows, homeowners should mount pieces of plywood on the outside of their windows.

Lengths of plywood one family needs to cover their windows

Lengths of Plywood (in feet)				
5	$2\frac{2}{3}$	$4\frac{2}{3}$	$5\frac{2}{3}$	$5\frac{1}{3}$
$4\frac{2}{3}$	$5\frac{1}{3}$	6	$4\frac{2}{3}$	$5\frac{2}{3}$
$5\frac{1}{3}$	$4\frac{2}{3}$	$5\frac{2}{3}$	$5\frac{1}{3}$	$4\frac{2}{3}$

1. Complete the line plot.



2. Which length is the most common?

$4\frac{2}{3}$ feet

3. How much longer is the longest piece of plywood than the shortest piece of plywood?

$3\frac{1}{3}$ feet

4. **Extension** A family said that more than half of the pieces of plywood are at least 5 feet long. Do you agree? Explain.

Yes; Sample answer: There are 9 pieces of plywood that are at least 5 feet long and 6 pieces of plywood that are less than 5 feet long. So, more than half of the pieces of plywood are at least 5 feet long.

FLORIDA

SAVVAS SCIENCE EXPLORATIONS™

The state of Florida consists of a long peninsula surrounded by water. Therefore, it is no secret that boating has played an important role in Florida's history of industry, tourism, and recreation. Incredibly, these boats must float with hundreds or thousands of pounds of additional cargo. How are these boats designed to take on cargo without sinking? Explore balanced forces in Topic 3, as well as other phenomena that shape tools that we use on a daily basis in *Savvas Science Explorations!*

GRADE 5

SAVVAS LEARNING COMPANY

Savvas.com
800-848-9500

SAM: 9798213402230

Join the Conversation
@SavvasLearning

0424.MRH.LB.Sci5E1R1399