📊 Lesson Plan: Math in Science

Grade Level: 3
Subject: General Science
Duration: 45–60 min
NGSS 3-ESS2-1: Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

🎯 Learning Objectives

By the end of this lesson, students will be able to:

- **Identify** standard units of measurement used in science, such as meters, grams, and liters
- **Create** and interpret graphs (bar, line, and pie) to represent scientific data
- **Apply** mathematical calculations to analyze observations and experimental results

- Printed copies of the Study Guide (https://newpathworksheets.com/api/guide/study-guide-science-grade-3-math-in-science-3rd-grade.pdf)
- Math in Science Worksheet 1 (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-math-in-science-3rd-grade-0.pdf)
- Math in Science Worksheet 2 (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-math-in-science-3rd-grade-1.pdf)
- Math in Science Worksheet 3 (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-math-in-science-3rd-grade-2.pdf)

📝 Lesson Procedure

Step 1: Introduction (5 minutes)

- Ask students: 'How do you think scientists use math when they study plants or the weather?'
- Introduce the concept that math helps scientists measure, count, and compare things accurately.
- Show the 'When Studying Plants' section from the Study Guide to illustrate measuring growth. (https://newpathworksheets.com/api/guide/study-guide-science-grade-3-math-in-science-3rd-grade.pdf)

Step 2: Direct Instruction (15 minutes)

- Review standard units of measurement (centimeters, grams, degrees Celsius) using the Study Guide.
- Explain how to read different graphs found in the Study Guide: line graphs for plant growth

erosion calculations. (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-math-in-science-3rd-grade-1.pdf)

- Circulate to assist students with calculating differences and reading the 'Recycled Materials' chart.

Step 5: Assessment (10 minutes)

- Administer Math in Science Worksheet 3 as a formative assessment.

- Students will demonstrate their ability to measure length, calculate mass, and interpret data tables. (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-math-in-science-3rd-grade-2.pdf)
- Review the answers to check for mastery of measurement and data analysis concepts.

Differentiation Strategies

For advanced learners:

- Challenge students to create their own bar graph using data collected from a simple classroom survey (e.g., favorite colors).
- Have students convert measurements from centimeters to meters or grams to kilograms.

For learners needing support:

- Provide rulers and manipulatives to help students visualize the measurements.

- Study Guide: Math in Science (https://newpathworksheets.com/api/guide/study-guide-science-grade-3-math-in-science-3rd-grade.pdf)
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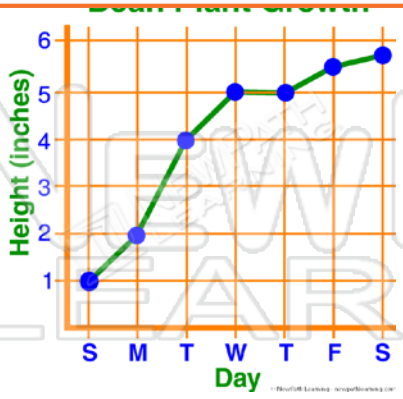
MATH IN SCIENCE

Numbers, measuring, making graphs, calculating, adding, subtracting, and more…there is a lot of Math involved in Science. Whether you are studying plants, animals, or the solar system, you will use Math procedures during your investigations and data recording.

Let's look at some examples of using Math in Science:

When Studying Plants

If you are conducting an experiment with two plants and you plan to compare the growth of each plant in centimeters – you'll be doing Math! You will have to measure both plants with a ruler and see which number is larger, in centimeters.

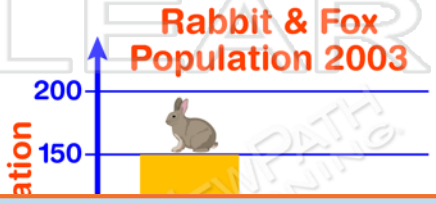


When Investigating Animals

Let's say you want to investigate which animal has the longest life span. You might make a bar graph to compare the life spans of several long living animals to easily see which animal lives the longest.

When Studying Relationships Among Living Things

When comparing animal populations in a community, you might make a bar graph of certain predators and their prey (such as foxes and rabbits) to note the differences between the populations of the two. Graphs often make information easy to read and to understand.



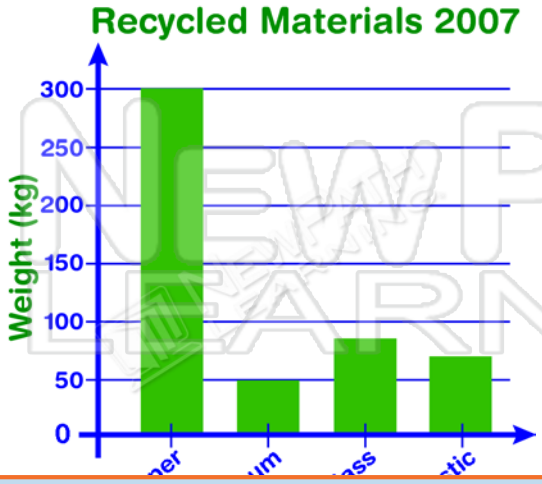
procedures when studying the effects of weather on soil as well. For instance, you might want to investigate how many centimeters of soil erode from a coastline in a three year time period.

When Studying Changes on Earth

Numbers are certainly important when it comes to studying earthquakes. Numbers are ranked on a Richter Scale to determine the strength of an earthquake.

When Keeping Track of Recycling

You would need to measure the weight of different objects in science as well, such as measuring how many kilograms of glass your school recycled in one year.



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When Observing Forces, Motion, and How Things Move

You will also find that you use numbers and math procedures when studying different forces and objects in motion. You might measure the distance it takes for one object to move from one place to another and you might then chart your results and findings on a graph.

When Dealing with Simple Machines

Numbers and measuring also are used when comparing the benefits of using simple machines. For example, you might compare the difference in centimeters and meters when raising a heavy box with your hands and arms with raising the same box with a pulley.

When Testing Sounds

Sound is measured in decibels. You can make a chart or graph comparing different sounds and the decibels each sound measures for comparison.

Decibels of Sound

a whisper	10
normal converstion	60
Train horn	100

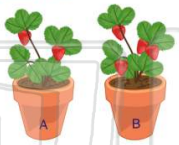
Math in Science

Sci C

Name_____ Class_____ Date_____

1 Plant A took 60 days to grow fruit. Plant B took 75 days to grow fruit. **How much longer** did Plant B take to grow fruit than Plant A?

A 5 days
B 10 days
C 15 days
D 20 days



2 The vine you planted grew 4 cm the first week, 6 cm the second week, 11 more cm the third week, and 10 cm the fourth week. How many centimeters did your vine grow **altogether**?

A 21 cm
B 19 cm
C 41 cm
D 31 cm

3 If the bean plant grew 5 cm every week, what is the **missing measurement** on this bar graph?

A 5 cm
B 10 cm

4 Which animal takes the **longest time** to grow and develop inside its mother before birth?

A elephants
B tigers

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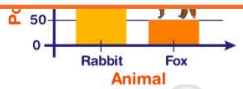
C 25
D 150



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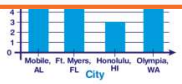
D Olympia, WA

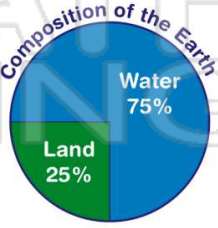


9 How many **live trees** were growing in Sunshine Park in Florida before the hurricane hit the area if a hurricane hit the park in September?

A 157 trees
B 87 trees
C 187 trees
D 57 trees

10 According to the pie chart below, how much of the Earth is made up of **water**?

A 25%
B 20%
C 70%
D 75%



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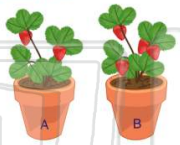

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D 150

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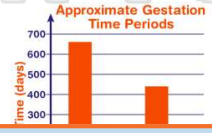

A

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A

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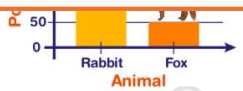
A



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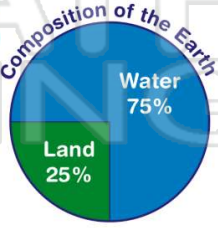

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Math in Science

Sci C

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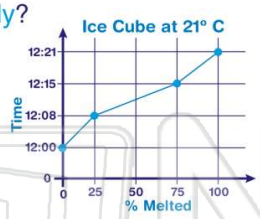
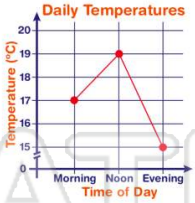
1 How long did it take the ice cube to **melt** completely?



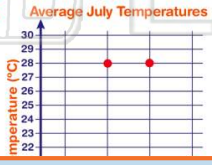
A 8 minutes
B 15 minutes
C 21 minutes
D 18 minutes

2 How much **warmer** was it in the morning at your school than in the evening?



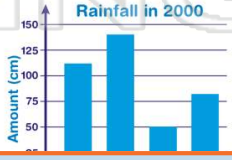
A 2°C
B 15°C
C 19°C
D 5°C

3 What was the **average temperature** in Houston, Texas during the month of July?



A 29°C

4 What city had the **most rainfall** in the year 2000?



A Lakeland
B Pominville
C Sun City

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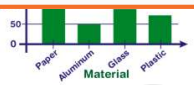
C 70 kg
D 50 kg



B Miss Petty's
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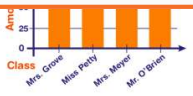
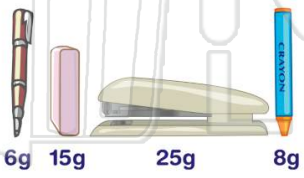
D Mr. O'Brien's



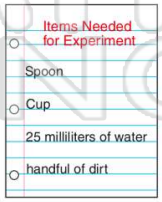
9 Which object weighed the **most**?

A pen
B eraser
C stapler
D crayon



10 How many **milliliters** of **water** do you need to conduct this experiment?

A 35 milliliters
B 15 milliliters
C 5 milliliters
D 25 milliliters



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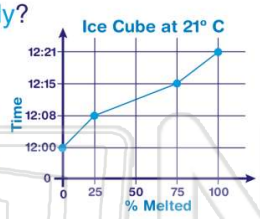

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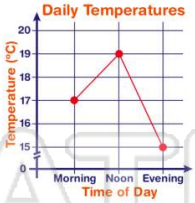

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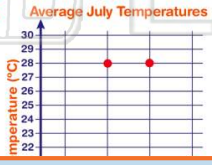

D

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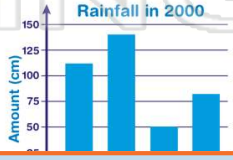

B

C

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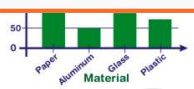
C 70 kg
D 50 kg



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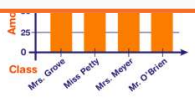

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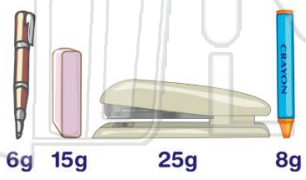

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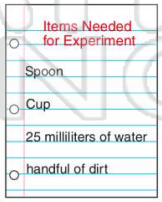

D

Math in Science

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1 How many **more** centimeters long is the pencil than the crayon?

A 8 cm
B 15 cm
C 7 cm
D 6 cm

2 Mary needs to sort these coins into groups. **How much** money does Mary have in coins?

A 95¢
B $1.15
C $1.00
D $1.05

3 Mark is making a mixture of fruit to create a fruit salad. How many **grams of fruit** did he combine **in all**?

A 500 grams
B 550 grams

4 If you rode your bike for an average of 5 km every hour, how many km would you ride in **6 hours**?

A 15 km
B 20 km

5

7

D rock concert

Train horn	100
Rock concert	150

D fall

9 How many **kilometers** is Earth from the Sun?

A 150 million kilometers
B 228 million kilometers
C 58 million kilometers
D 108 million kilometers

Distance from the Sun

Mercury	58 million km
Venus	108 million km
Earth	150 million km
Mars	228 million km

10 If one day on Earth is equal to 24 hours, how many **hours** does 3 days on Earth equal?

A 36 hours
B 12 hours
C 48 hours
D 72 hours

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5

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7

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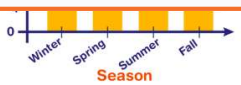

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