

Summer Science Enrichment Packet

Rising 6th Graders



**Prince George's County Public Schools
Division of Academics
Department of Curriculum and Instruction**

Note to The Students and Parents/Guardians

This calendar consists of daily activities to extend the learning beyond the school year. Be sure to keep track of your experiences in a science journal. (Suggested Journal: Wide-Ruled or College-Ruled Composition Book)

Some practices that Rising 6th Grade students should understand include:

1. Asking questions (for science) and defining problems
(for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing
solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

Activities (Weeks: 1-4, Monday - Friday) This month you will focus on energy in an ecosystem.

Days 1 and 2 <u>Review/Research Question:</u> What is an ecosystem? Draw a picture of an ecosystem. Be sure to include: Producers, consumers, decomposers, and a water source.	Day 3 Think about what you learned in 5 th grade about how plants get their food. In your journal, describe how this is different from how animals get their food.	Day 4 Draw a model (a food chain) to show how animals get their energy from the sun. In the diagram, use arrows to show the flow of energy. For example, use an arrow to point from grass to a rabbit to show the direction that energy flows.	Day 5 Write a scientific explanation describing how life on Earth would change if the sun were suddenly blocked out for 20 years. Remember that scientific explanations should be written in paragraph form.										
Day 6 Think about the role of “decomposers.” Explain how they are very important in an ecosystem. Describe what would happen if decomposers were missing from an ecosystem.	Day 7 Think about the nonliving parts of an ecosystem. Make a chart listing the parts in one column and the role the part has in the second column. See the sample below. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">Nonliving Parts of an Ecosystem</th> <th style="padding: 5px;">Role of the Part</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Air</td> <td style="padding: 5px;">provides the carbon dioxide (for plants) and oxygen (for animals)</td> </tr> </tbody> </table>	Nonliving Parts of an Ecosystem	Role of the Part	Air	provides the carbon dioxide (for plants) and oxygen (for animals)	Days 8 and 9 Make a three-column chart on some of the living parts of a forest ecosystem. List the living parts in column one, the role the living part in column two, and whether it is a producer, consumer, or decomposer in column three. Be sure to include at least one example from each of the three categories of organisms. See the sample below. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">Living Parts of a Forest Ecosystem</th> <th style="padding: 5px;">Role of the Living Part</th> <th style="padding: 5px;">Producer, Consumer, or Decomposer?</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Oak tree</td> <td style="padding: 5px;">Provides shelter for animals, food for squirrels</td> <td style="padding: 5px;">producer</td> </tr> </tbody> </table>	Living Parts of a Forest Ecosystem	Role of the Living Part	Producer, Consumer, or Decomposer?	Oak tree	Provides shelter for animals, food for squirrels	producer	Day 10 Think about what you have discovered about ecosystems. In your journal, write your responses to the following: <ul style="list-style-type: none">• Explain how a food web and a food chain are different.• Explain how producers, consumers and decomposed depend on each other in an ecosystem.
Nonliving Parts of an Ecosystem	Role of the Part												
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Living Parts of a Forest Ecosystem	Role of the Living Part	Producer, Consumer, or Decomposer?											
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Day 11 Use the information below to create a data table showing the number of animals observed by a scientist in a particular ecosystem in a one-hour period. Be sure to give the table a title. In the table, create columns for Day 1, Day 2, Day 3, and a column for the average. Data for Days 2 and 3 and the average will be added later. Day 1: 5 squirrels, 10 birds, 1 frog, 2 turtles, 1 rabbit, and 6 spiders	Days 12 and 13 On the second day, the scientist observed the following number of animals in the same ecosystem: four squirrels, six birds, two frogs, zero turtles, two rabbits, and two spiders. On the third day, the scientist observed three squirrels, seven birds, three frogs, one turtle, three rabbits, and three spiders. Calculate the average number of each animal for all three days and insert the information into the data table.	Day 14 Create a bar graph to display the average number of each animal from the data table. Be sure to label the -x and -y axis and add a title to the graph.	Day 15 In your journal, answer the question below and provide an explanation for your reasoning on selecting that answer choice. In an ecosystem, birds depend on insects to survive. If someone spreads pesticide to control the insect population, which of the following is most likely to happen? <ul style="list-style-type: none">a) The bird population will increase.b) The bird population will decrease.c) The bird population will decrease, then increase.d) The bird population will increase, then decrease.										

Days 16 and 17

Read the [Coral Ecosystems](#) reading passage and answer the following questions:

1. How do the ocean's fish populations depend on the coral reef?
2. What nickname is given to the coral reefs?
3. How do people benefit from coral reefs?

Day 18

Think about images you have seen of a beach or experiences that you have had on your own visits to a beach or lake. Have you seen any things that did not belong? Describe what you have seen and what humans can do to improve our water ecosystems.

Days 19 and 20

Imagine that you have been hired as an exhibit designer a new museum. You have been asked to design a forest ecosystem exhibit. Draw and label a plan/design for the exhibit.

Activities (Weeks: 5-6, Monday – Friday) This month you will focus on the work of scientists and engineering and Earth's place in the universe and our impact on Earth.

Day 21

Think about what you already know about what kinds of things scientists and engineers have helped us learn about space. Create a list of things that we have discovered about space.

Day 22

Describe how the sky looks in the daytime versus how the sky looks at night. Explain what causes this difference.

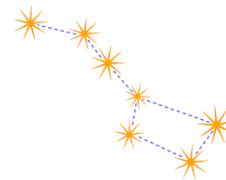
Day 23

View the data table below. Would you expect the number of days for Saturn to be higher or lower than the number of days for Jupiter? Explain your answer.

Planet	Number of Days to Orbit the Sun (in Earth days)
Mercury	88
Venus	225
Earth	365
Mars	687
Jupiter	4,333
Saturn	?
Uranus	30,687
Neptune	60,190

Days 24 and 25

Research popular constellations like the Big Dipper or Orion. Place about ten random dots (or stars) on a page and make your own constellation. Write a creative short story about the new constellation.



Day 26

Draw and label a diagram of the **water cycle** using the following labels:

Precipitation
Evaporation
Runoff
Condensation
Groundwater

Day 27

Precipitation comes in various forms.

Name some of the types of precipitation. Please explain why it exists as different types.

Day 28

Sometimes rain and runoff cause litter to end up in rivers and lakes. We can prevent litter and trash from ending up in our waterways by recycling and putting trash where it belongs. Most areas now have recycling programs. Think about how recycling works where you live. Make a list of things that you can do to help.

Days 29 and 30

Write a 1-minute public service announcement explaining how important it is to maintain a healthy planet for our survival.