COLLECTION OF 4TH GRADE LEAP RELEASED TEST ITEMS

Note:
1. You can find the unabridged version of all 4th Grade LEAP Released Test Items and Samples of Student Work at http://www.caddoscience.com/curriculum.html under 4th Grade.
2. The State stopped producing Released Test Items in 2012 and there was no document produced in 2010.
1. On a field trip in a wooded area, you see a small, strange object. You wonder whether it is a live animal. The best way to find out is to observe the object to see if it
A. has and odor. *
B. has separate parts.
C. can make a noise and has a lifelike color.
D. carries out basic life functions

2. Jeannie put her soccer ball on the ground on the side of a hill. What force acted on the soccer ball to make it roll down the hill?
A. gravity *
B. electricity
C. Friction
D. magnetism

3. Which of these is a nonliving thing?
A. a mushroom
B. a tree
C. a worm
D. river *
4. Which drawing below would represent the flagpole’s shadow at 5:00 P.M.?

A. 

B. 

C. 

D. 

Directions: Use the pictures below to answer question 5.

5. Explain how each of the four living things in the picture is linked together in a food web. Be sure to describe the role of each of the living things.

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
Science Task

Use the information below to answer question 6.

Task Description

Mammals have teeth that are specifically adapted to allow them to eat specific types of foods. For this task, you will investigate different tooth adaptations shown by carnivores and herbivores. You will be given a chart showing how the incisors, canines, and molars are specially adapted to each food source. Then you will use this information to identify several skulls as either herbivore or carnivore skulls. After the investigation, you will answer questions about the task.

Materials

You will need the “Tooth Chart” and the “Skulls of Unknown Animals” sheet showing pictures of different animal skulls.

Directions

In this task, you will investigate how the teeth of different mammals are adapted to the types of food they eat. You will use the “Tooth Chart” to identify the skulls on the cut-out cards. Before you begin, carefully cut out the pictures of the skulls from the “Skulls of Unknown Animals” sheet and lay them out on your desk.
## TOOTH CHART

<table>
<thead>
<tr>
<th>Tooth Type</th>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canine</td>
<td>Incisor</td>
<td>Incisor</td>
</tr>
<tr>
<td>Premolars and molars</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incisors</td>
<td>used for nipping and tearing meat—very sharp and pointed</td>
<td>used for grabbing and tearing plant materials—flat and long</td>
</tr>
<tr>
<td>Canines</td>
<td>used for stabbing and tearing—larger than incisors and very sharp</td>
<td>used for grabbing and tearing plant materials—flat and long, and smaller than incisors</td>
</tr>
<tr>
<td>Molars &amp; Premolars</td>
<td>shorter than incisors, but still very sharp—used for slicing food into smaller pieces (used like a pair of scissors)</td>
<td>flat and broad—used for grinding up plant materials</td>
</tr>
</tbody>
</table>

## SKULLS OF UNKNOWN ANIMALS

1. ![Skull 1](image1)
2. ![Skull 2](image2)
3. ![Skull 3](image3)
4. ![Skull 4](image4)
5. ![Skull 5](image5)
6. ![Skull 6](image6)
6. Look at the cards with the pictures of the animal skulls. Use the “Tooth Chart” to decide if the animal on each card is a carnivore or a herbivore.

a. Sort the cards into two piles: carnivores and herbivores. Then write the numbers from the cards in the correct circles below.

b. Explain one characteristic you used to group the animal skulls.

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
1. If each horse is pulling with the same force, in which direction will the rock move?

A. north  
B. east  
C. south *  
D. west

2. Ms. Henderson’s class has five small, covered boxes. One contains perfume; another contains dried onions. There is also a box of pine needles, a box of lemon pieces, and a box with a paper towel wet with vanilla flavoring. Which should they do to get the best information about what is in each box?

A. Shake the boxes.  
B. Smell the boxes. *  
C. Listen to the boxes.  
D. Weigh the boxes.

3. When you are getting up to go to school in Louisiana, a student on the other side of Earth is getting ready for bed. What is the reason for this?

A. Earth revolves around the sun.  
B. Earth rotates on its axis. *  
C. The sun rotates on its axis.  
D. The moon revolves around Earth.
Use the picture below to answer question 4.

4. What does the heart do for the body?

A. It takes oxygen in from the environment.
B. It turns food into energy.
C. It removes waste from the blood.
D. It moves blood through the body. *

Use the pictures below to answer question 5.

5. Some people think that bats and birds are like. Other people say that they are very different. Look at the two pictures.

a. Tell one way bats and birds are the same.

b. Tell one way bats and birds are different.

<table>
<thead>
<tr>
<th>a. Tell one way bats and birds are the same.</th>
<th>b. Tell one way bats and birds are different.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Use the graph below to answer question 6.

6. The graph above shows the owl population in a large forested area over a 20-year period. The graph also shows the acres of forest that were cleared for lumber over the same time period.

a. Why did the owl population change?
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

b. What could have been done to prevent the change in owl population?
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
Use the picture below to answer question 1.

1. The spoon appears to be broken where it enters the water because

   A. the light is reflected by the water.  
   B. the light is absorbed by the water.  
   C. the light is bent by the water.  *  
   D. the light is dissolved by the water.

2. A rock sample will most likely contain

   A. plants.  
   B. minerals.  *  
   C. water.  
   D. wood.
Use the information and chart below to answer question 3.

The students at Hoover Elementary School did a survey of the eye colors of all the fourth graders at their school. The results are shown in the data chart below.

**Hoover Elementary School Fourth-Grade Eye Colors**

<table>
<thead>
<tr>
<th></th>
<th>Blue</th>
<th>Brown</th>
<th>Green</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ms. Musso’s class</td>
<td>9</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Mr. Broussard’s class</td>
<td>2</td>
<td>10</td>
<td>4</td>
</tr>
</tbody>
</table>

3. What does the chart show about Hoover Elementary Schools?

A. Brown is the most common eye color in each fourth-grade class.  
B. Green is the least common eye color in both fourth-grade classes.  
C. Brown is the most common eye color in fourth grade. *  
D. Blue eyes are more common in boys than in girls in fourth grade.

Use the picture below to answer question 4.

4. Which of these lists only living parts of this ecosystem?

A. fox, tree, grass *  
B. sun, stream, cloud  
C. cloud, grass, rock  
D. stream, cloud, fox
Question 5: Short Answer

Complete parts a and b.

a. Draw one flowering plant you would find near your school. Label one part of that plant.

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

What is the function of the part you labeled in your drawing?
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
Question 6: Short Answer

Use the picture below of Sharon pulling a wagon on a level sidewalk to answer parts a and b.

a. How would the movement of the wagon be affected if she pulled harder on the wagon?

__________________________________________________________________________

__________________________________________________________________________

b. How would the movement of the wagon be affected if her little brother were sitting in the wagon?

__________________________________________________________________________

__________________________________________________________________________
LEAP Release Test Items: 2004

The purpose of this document is to give Caddo educators access to all 4th Grade LEAP Released Test Items in one document. All in depth description of each test item, rubrics for short answer and task questions, and sample student answers can be found at the Caddo Science and Louisiana Believes websites.

1. Which group of living things shares the most characteristics?

A. Cat, Dog, Rabbit

B. Fish, Crab, Crayfish

C. Bird, Butterfly, Bat

D. Spider, Grasshopper, Worm

Correct answer: A

2. Which object in the sky is a satellite of the planet Earth?

A. Sun
B. Moon *
C. Mars
D. Saturn
3. What is one way people are helping the environment?
A. They are planting trees to replace the ones that are cut. *
B. They are building more roads so more people can see natural areas.
C. They are building more dumps to hold the trash we create.
D. They are using their cars more to get to places faster.

Use the information and picture below to answer question 4.

Here is a food chain for a pond.

algae → insect → bluegill → largemouth bass

What would happen to the largemouth bass if all the algae were removed from the pond? Describe what would happen to all four parts of this food chain.

4. ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
**Questions 5-7: Science Task**

Please write your answers to questions 5-7 on the lines or in the spaces provided below each question. Write your answers clearly. Some of the questions have more than one part. Even if you cannot answer all parts, answer as many as you can.

When you finish question 4, you may review your work in this session, but do NOT work on any other test session.

**TASK DESCRIPTION**: Pond Community

**MATERIALS NEEDED**: Pond Community Data Sheet

For this task you will consider different organisms. Look at the Pond Community Data Sheet. Then use it to do the following activities.
## Pond Community Data Sheet

<table>
<thead>
<tr>
<th>Name of Organism</th>
<th>Illustration</th>
<th>Antennae</th>
<th>Number of Legs</th>
<th>What They Eat</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water plants</td>
<td><img src="image1.png" alt="Illustration" /></td>
<td>no</td>
<td>0</td>
<td>nothing—they make their own food</td>
<td>green</td>
</tr>
<tr>
<td>Dragonfly</td>
<td><img src="image2.png" alt="Illustration" /></td>
<td>yes</td>
<td>6</td>
<td>snails</td>
<td>brown</td>
</tr>
<tr>
<td>Bass</td>
<td><img src="image3.png" alt="Illustration" /></td>
<td>no</td>
<td>0</td>
<td>bluegill fish</td>
<td>gray-green</td>
</tr>
<tr>
<td>Snail</td>
<td><img src="image4.png" alt="Illustration" /></td>
<td>yes</td>
<td>0</td>
<td>water plants</td>
<td>gray</td>
</tr>
<tr>
<td>Water bug</td>
<td><img src="image5.png" alt="Illustration" /></td>
<td>yes</td>
<td>6</td>
<td>snails</td>
<td>black</td>
</tr>
<tr>
<td>Bluegill fish</td>
<td><img src="image6.png" alt="Illustration" /></td>
<td>no</td>
<td>0</td>
<td>dragonflies</td>
<td>blue-green</td>
</tr>
</tbody>
</table>
5. Construct a bar graph showing the number of legs on the bass, dragonfly, and water bug.

![Bar Graph]

6. List the organisms from your Data Sheet that have antennae.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

7. Give two reasons why the dragonfly and water bug are similar.

1. _________________________________________________________________
________________________________________________________________________

2. _________________________________________________________________
________________________________________________________________________
1. Why do the Sun and Moon appear to move across the sky?

A. The rotation of the solar system makes the Sun and Moon seem to move.
B. The rotation of Earth makes the Sun and Moon seem to move. *
C. The Sun and Moon revolve around Earth.
D. Earth revolves around the Sun and the Moon.

Use the pictures below to answer the following question.

2. Mark is using these materials to compare how water flows through three different soils. Which safety rules should he follow while doing the experiment?

A. fire safety rules
B. glassware safety rules *
C. electrical safety rules
D. plant safety rules
3. What could you add to this to make it a more balanced meal?
A. a glass of milk *
B. a banana
C. a pork chop
D. a muffin
Science Task: Swing Set

Directions: Write your answers to questions 4-6 on the lines or in the spaces provided. Some of the questions have more than one part. Even if you cannot answer all parts, answer as many as you can. You may still get points for answering part of a question. Write your answers clearly. When you finish the Science Task, you may review your work in this session, but do not work on any other session.

Swing Set

Science Jenna and Paul like to swing. There are several swings on the playground. Jenna and Paul are interested in how swings work. They ask their teacher for help. First, their teacher hangs the swings at different distances from the top of the swing set and measures the length of the chains on each swing. Then Jenna and Paul pull each swing back, let it go, and measure the time for the swing to go forward and back again. They call this “Time for One Complete Movement.” Look at chart 1 on your handout to see what they learn about swing length and time for one complete movement.

### Length of Swing's Chains

<table>
<thead>
<tr>
<th>Swing 1</th>
<th>Swing 2</th>
<th>Swing 3</th>
<th>Swing 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 m</td>
<td>4 m</td>
<td>6 m</td>
<td>9 m</td>
</tr>
</tbody>
</table>

### Table 1
Observations on Swing Lengths

<table>
<thead>
<tr>
<th>Swing</th>
<th>Length of the Swing's Chain (meters)</th>
<th>Time for One Complete Movement (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td>6</td>
</tr>
</tbody>
</table>
4. List or describe two tools used in Jenna and Paul's experiment other than the swing.

1. ________________________________________________________________________
   ________________________________________________________________________

2. ________________________________________________________________________
   ________________________________________________________________________

5. Complete the bar graph below to show how the length of a swing's chains affects the time it takes for one complete movement.

   ![](chart.png)

6. Paul has a swing that makes one complete movement in 7 seconds.

   A. Use chart 1 to predict the length of the chain on Paul's swing.

   ________________________________________________________________________
   ________________________________________________________________________
   ________________________________________________________________________

   B. Explain how you got your answer.

   ________________________________________________________________________
   ________________________________________________________________________
   ________________________________________________________________________
   ________________________________________________________________________
   ________________________________________________________________________
Use the map below to answer the following question.

1. Springfield, Missouri, and San Francisco, California, are at similar latitudes, but they have very different climates. Springfield has very hot summers and cold winters, while San Francisco has about the same temperatures all year. What is the most likely reason the two cities have such different climates?

A. the amount of sunlight on each city
B. the distance of each city from an ocean *
C. the elevation above sea level of each city
D. the distance of each city from the equator

2. What is an energy change that takes place in a light bulb?

A. Chemical energy changes to light energy.
B. Chemical energy changes to heat energy.
C. Electrical energy changes to light energy. *
D. Electrical energy changes to chemical energy
3. Della has a mixture of soil and water in a jar. Which of the following tools would best help Della separate the soil from the water?

A. a filter *
B. a measuring cup
C. a balance
D. a magnifying glass

**Use the list below to answer the following question.**

- insects
- flowers
- birds

4. Which of these items below belongs best with the list of items in the box?
A. oil
B. rocks
C. grass *
D. glaciers

**Use the sign and information below to answer the following question.**

5. The sign pictured above can be seen on many materials such as glass, plastic, paper, and metals. The sign means that these materials can be recycled.

a. What is recycling?

b. Why is it important to recycle materials?
6. Complete parts a and b.

a. Using the picture of Earth and the Sun below, mark a spot on Earth where it is day with a "D." Then mark a spot on Earth where it is night with an "N."

![Image of Earth and Sun]

b. Louisiana goes through a period of day and night every 24 hours. Explain what causes day and night.

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
1. When Jake breathes out on a cold day, a cloud is formed. Which change occurs that lets Jake see his breath as a cloud?

A. Gas changes to liquid. *
B. Solid changes to gas.
C. Liquid changes to gas.
D. Liquid changes to solid.

Use the table below to answer the following question.

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Height (cm) in September</th>
<th>Height (cm) in June</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anna</td>
<td>132</td>
<td>132</td>
</tr>
<tr>
<td>Calvin</td>
<td>132</td>
<td>139</td>
</tr>
<tr>
<td>Denise</td>
<td>135</td>
<td>136</td>
</tr>
<tr>
<td>Frank</td>
<td>157</td>
<td>162</td>
</tr>
<tr>
<td>Marion</td>
<td>139</td>
<td>143</td>
</tr>
<tr>
<td>Rachel</td>
<td>144</td>
<td>150</td>
</tr>
</tbody>
</table>

2. Which student in Mary’s class grew the most during the school year?

A. Anna
B. Calvin *
C. Frank
D. Rachel
3. Sarah put 10 marigold seeds in a pot of sand and 10 marigold seeds in a pot of soil. She then put both pots near a window and watered them with the same amount of water every few days. After three weeks, Sarah measured the height of the marigold seedlings in each pot. What was Sarah probably testing?

A. how light affects the growth of marigolds  
B. which type of marigold grows best  
C. whether marigolds grow better in soil or in sand *  
D. how water affects the growth of marigolds

4. Sara Jo put some sugar and water in a shallow dish and stirred it until the sugar disappeared. She left the dish of sugar and water solution on a shelf. After several days, she noticed that the dish had sugar crystals on the sides and a small amount of water in the middle.

Explain why the sugar crystals appeared.
5. In which position does the rider use the least amount of force?

A. position 1  
B. position 2  
C. position 3  
D. position 4  *  

Use the list below to answer the following question

| plant | fox | rabbit |

6. In the space below, make a food chain using the organisms shown above. Draw arrows to connect each organism with its food or source of energy.
LEAP Release Test Items: 2008

The purpose of this document is to give Caddo educators access to all 4th Grade LEAP Released Test Items in one document. All in depth description of each test item, rubrics for short answer and task questions, and sample student answers can be found at the Caddo Science and Louisiana Believes websites.

1. Choose the investigation that would best answer the question: Does the length of a string change how fast a pendulum swings?

A. Tie identical weights to two strings of different lengths. *
B. Tie two different weights to a string.
C. Tie identical weights to a long string.
D. Tie two different weights to two identical strings.

2. Anne and her father find a 30-million-year-old tropical plant fossil in Louisiana. Which question does the fossil help them answer?

A. Were there mountains in Louisiana 30 million years ago?
B. What was the climate like in Louisiana 30 million years ago? *
C. Were there earthquakes in Louisiana 30 million years ago?
D. What kind of animals lived in Louisiana 30 million years ago?

3. How does too much fishing in an area affect its ecosystem?

A. The fish will lay many more eggs to replace the fish that were caught.
B. Organisms that eat the fish could become endangered due to starvation. *
C. Organisms that the fish eat will become endangered.
D. People could eat too many fish and become ill.

4. Which of the animals does not have a backbone?

A. 
B. 
C. 
* D. 

Correct answer D
Use the pictures below to answer question 4.

4. These are pictures of how the Moon appears at different times. Full Moon Gibbous 3rd Quarter Crescent New Moon Crescent 1st Quarter Gibbous Full Moon
A. How long does it take for all the phases shown above to take place?

__________________________________________________________________________

__________________________________________________________________________

B. Explain why the Moon looks different at different times

__________________________________________________________________________

__________________________________________________________________________
6. A. How does the form of energy change when energy moves from the battery through the wire to the light bulb?

________________________________________________________________________
________________________________________________________________________

B. What two forms of energy are produced by the light bulb?

________________________________________  ___________________________________
1. Sophie investigates the water supply at her school and the things that affect it. Which action is a direct observation?

A. tasting water from a water fountain *
B. reading water test results
C. studying the rules for purifying water
D. investigating causes of water pollution

Use the data table below to answer question 2.

<table>
<thead>
<tr>
<th>Observations of Unknown Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>is shiny</td>
</tr>
<tr>
<td>conducts electricity</td>
</tr>
<tr>
<td>is not magnetic</td>
</tr>
</tbody>
</table>

2. According to the evidence in the data table, which material most likely makes up this object?

A. iron
B. polished wood
C. copper *
D. plastic wrap

3. Mrs. Tucker gives her class samples of different soil types. Which action best helps Tanisha identify each soil type?

A. smelling it
B. touching it *
C. weighing it
D. measuring it
3. What happens in stage 2 of a butterfly’s life cycle?

A. It hatches into a larva.
B. It changes its body shape.
C. It mates with other butterflies.
D. It eats and grows. *

4. Explain how a beaver’s environment meets two of its basic needs.

1. ______________________________________________________________________

________________________________________________________________________

2. ______________________________________________________________________

________________________________________________________________________
1. At what time on a sunny day will the shadow of the school’s flagpole be the shortest?
   A. sunrise
   B. noon *
   C. mid-afternoon
   D. sunset

2. In which of the drawings below will the bulb light?

   A. 
   B. 
   C. 
   D. 

Correct answer D
3. Joann is testing soils to see which kind is best for growing marigolds. Which of the following should she do?

A. Plant the marigolds in the same soil, but water some plants more than others.
B. Plant the marigolds in one kind of soil, radishes in another, and daisies in a third kind.
C. Plant the marigolds in three kinds of soil, and give them different amounts of sun.
D. Plant the marigolds in three kinds of soil, and give them the same amounts of water and sun.*

**Question 4:** Use the picture below to answer the question.

Which animal belongs in the same category as the lizard?

A.  
B.  
C.  
D.  

*Correct Answer D*
Question 5: Answer parts A and B.

A. Look at the picture below.

What causes a solar eclipse?
__________________________________________________________________________
__________________________________________________________________________

B. Look at the picture below.

What causes a lunar eclipse?
__________________________________________________________________________
__________________________________________________________________________

6. The school playground is littered with paper and trash. Tell two ways to keep this from happening again.

1. ________________________________________________________________________

2. ________________________________________________________________________
1. An ocean, a forest, and a grassy meadow are each examples of a complete ecosystem. Complete ecosystems contain only

A. animals.
B. rocks and water.
C. living and nonliving things.
D. populations of plants and animals.

Use the graph below to answer question 2.

![Distance and Time Traveled by a Car](image)

2. A student drew a graph that shows the motion of a car as it traveled down a street. When was the car stopped at a stoplight?

A. between 1 and 3 minutes
B. between 3 and 5 minutes
C. between 5 and 8 minutes
D. between 8 and 10 minutes
Use the picture below to answer question 3.

3. What part of the water cycle is represented by arrow Y?

A. evaporation  
B. precipitation  
C. condensation  
D. runoff
4. Use the calendar below to choose the best answer.

Students recorded daily weather conditions on a calendar for the first two weeks of April. Which graph best shows the weather conditions recorded by the students?

A. Number of Days

B. Number of Days

C. Number of Days

D. Number of Days
5. Great egrets live in marshes, ponds, and other shallow water areas and eat creatures such as fish. List two of the egret’s body parts that make it a good hunter in shallow water and explain how each body part helps the egret hunt.

1. ________________________________________________________________________
__________________________________________________________________________

2. ________________________________________________________________________
__________________________________________________________________________