

## Bedding – Sample

### Purpose

After a day at school, you get home, and you need to lie down and rest. What do you need to be comfortable? Animals need a comfortable place to rest as well. A key component of animal care is proper bedding for a healthy rest. What factors should you consider when selecting animal bedding?

An animal becomes sick or injured without the proper bedding. Animal bedding provides cushion and warmth while keeping the animal dry. The pads of an animal's foot cushion the animal while walking on soft ground and not a solid surface. In addition, an animal's nails or hooves will naturally wear down when walking on an abrasive surface. Wild animals will use natural materials to make a warm and comfortable bed. Domesticated animals will do the same when provided with bedding.

All animals produce urine and feces waste. Beddings absorb moisture and waste to keep the animal comfortable and clean. However, animal waste can be toxic to the animal and promote disease. Therefore, caretakers periodically replace bedding to keep the animal healthy. Caretakers must dispose of used bedding sustainably. Most beddings made of organic material can be composted and used as a natural fertilizer.

What criteria will you use when preparing a restful environment for an animal?

### Materials

#### Per group of students:

- Bedding samples (Straw, pine or cedar chips, sand, newspaper)
- Testing materials
- Weigh dish, 140mm x 22mm

#### Per student:

- Pencil

### Procedure

Your teacher will assign your group an animal with a housing facility that needs bedding. Develop a bedding to meet the animal's needs.

#### Part One – Research

1. Observe the physical properties of the bedding samples provided– record in Table 1.

**Table 1. Observations and Research**

Bedding	Physical Properties
Straw	
Pine or cedar chips	
Sand	
Newspaper	

2. Review the materials available for testing each bedding.

**Cushioning**

- Free weights
- Ruler
- Metal
- Cooking sheet
- Rocks

**Warmth**

- Device with Graphical Analysis™ App
- Go Direct® temperature sensor
- Heating pad or another heat source

**Absorption**

- Beaker
- Electronic balance
- Food coloring
- Graduated cylinder
- Water

3. Discuss how you plan to test one bedding for cushioning, warmth, or water absorption with your group.

4. Record your procedure for one test in Table 2.

**Table 2. Bedding Testing Procedures**

Test	Warmth	Cushioning	Absorption
<b>Materials</b>			
<b>Procedure</b>			

5. Follow your procedures to complete your test and rank the bedding for on a scale from 1 being the best to 6 being the worst in Table 3.



- Add missing rankings from other group’s tests.

**Table 3. Results**

Bedding	Warmth	Cushioning	Absorption
Straw			
Pine or cedar chips			
Sand			
Newspaper			

## Part Two – Design

1. Select animal from below and record it in Table 4.

	
<p><b>Animal:</b> Month old calf  <b>Housing:</b> 8'x8' pen with gravel floor  <b>Weight:</b> 45kg  <b>Urine production:</b> 1L per day</p>	<p><b>Animal:</b> Guinea Pig  <b>Housing:</b> 2'x3' pen with plastic floor  <b>Weight:</b> 1kg  <b>Urine production:</b> 45ml per day</p>

2. Use your group's animal and housing information and research results from *Part One* to design your bedding.
  - You can use any combination of beddings you have tested.
3. Construct your bedding in a weigh dish.
4. Record a description of your bedding in Table 4 on the design sheet. Include the following in your description.
  - Types of materials used and depth of each material with a sketch.
  - Which bedding material addresses the need for each cushioning, warmth, absorption?
  - How often will you have to replace it?

**Table 4. Design Process**

	Description
Animal	
Types and depth of materials with a sketch	
Cushioning	
Warmth	
Moisture absorption	
When to replace	

### Part Three – Test and Analysis

Test your design using your group’s procedure from *Part One* and record your results in Table 5. Do the absorption test last to prevent errors. Then, use your results to answer the *Analysis Questions*.

**Table 5. Bedding Testing Results**

Test	Warmth	Cushioning	Absorption
Designed Bedding			

q1 How did your bedding meet your design expectations?

q2 How would you improve your design?

# Sample Teacher Notes

## Teacher Preparation

Prepare a set of bedding samples for each student group by placing a cup of each bedding in a separate plastic bag. Have equipment and materials listed in Table 6 available for use.

**Table 6. Equipment and Materials**

Cushioning	Warmth	Absorption
<ul style="list-style-type: none"><li>• Free weights</li><li>• Ruler</li><li>• Metal</li><li>• Cooking sheet</li><li>• Rocks</li></ul>	<ul style="list-style-type: none"><li>• Device with Graphical Analysis™ App</li><li>• Go Direct® temperature sensor</li><li>• Heating pad or another heat source</li></ul>	<ul style="list-style-type: none"><li>• Beaker</li><li>• Electronic balance</li><li>• Food coloring</li><li>• Graduated cylinder</li><li>• Water</li></ul>

## Student Performance

### Part One

Students observe and research types of bedding. Then, students view available equipment and materials to develop one procedure for testing the cushioning, warmth, or water absorption. Students conduct their experiment and rank each bedding in the one category. Groups share rankings to complete their testing.

### Parts Two, Three, and Four

Student groups choose an animal. Next, they design bedding specific to the housing and animal by answering questions on the design sheet. Next, students test the bedding using their procedures from Part One and record their results. Finally, students complete the project by answering analysis questions.

## Results and Observations

After completion, student will understand the cushioning, warming and water absorption properties of different bedding materials. They will be able to use that knowledge to design a bedding specific to an animal's needs. Students complete the design as a group but record information on the design sheet individually.

# Sample APP

This sample is a modified version of *Project 6.6 Designed to Rest* from the CASE 4 Learning *AgXplore* (AgX) curriculum. For more information about the course visit [www.case4learning.org](http://www.case4learning.org). The sample has been modified for time and material simplification to fit a workshop format and is not for resale or profit. Teachers are permitted to use this sample in their classroom without certification.

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