

Doghouse Design!

Technology Learning Activity

Grade Level: 4-5



Situation for students

Your new family pet is a dog. Because the dog is going to grow rather large it may have to be kept safe outside, maybe in your backyard. Because you want your new best friend to be safe, warm and dry you will need to build a house for it. Dogs must have clean, protected water available all the time and a safe place for food.

Challenge

Investigate different types of doghouses paying close attention to their sizes, shapes, designs, and building materials. Design a shelter that will keep your dog comfortable all year long (pay close attention to wind) and have a device that would keep its water clean and safe from contaminants.

Criteria

It is not necessary to build a model of your design out of the exact materials, but it must be to an accurate scale and be decorated to resemble your chosen materials. Be sure your dog has access to water and possibly food. Your dog must also be able to stand up, stretch, and turn around inside the house.

To Do

Students should have a general grasp on measuring, material attributes, and scale. You should first provide the student packet to the students, as they will need it to begin brainstorming. You may provide all the worksheets at once, or distribute them as needed. Provide suggested materials as the students brainstorm what they could use or examples or suggestions.



1. Sketch four possible solutions with scaled dimensions with worksheet.
2. Make a final drawing of your design.
3. Build your model.
4. Prepare an oral presentation for the class.
5. Evaluate your model and presentation using the worksheet.

Background

Provide demonstration on tools available to the students if necessary. Offer websites such as:

<http://www.bishops.ntc.nf.ca/dtech1109/doghouse/> This website provides some samples of students who have completed an assignment very similar to this.

<http://www.petsvetsandyou.com/pcl/articles/c100011/q10000154.htm> An excellent website based on an article about pet safety from the *New York Times*.

<http://www.mikestrong.com/doghouse/> This website demonstrates how to build a conventional doghouse in cookbook format. (Note: there are some severe design problems in this prototype i.e. the egress placement)

<http://www.thedoghouseguy.com> Although it is a website dedicated to selling pre-constructed doghouses, it offers some suggestions on quality and size.

This site will also aid in the brainstorming process.

<http://www.teach-nology.com> Includes several useful teacher aids. Worksheets, rubrics, and word game generators are all free.

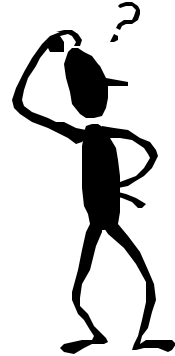


Possible Materials

Hardboard, cardboard, paper, wood, rubber, paint, crayons, markers, and tools used for the aforementioned materials could be appropriate. Legos® or other non-consumable building materials could also be utilized either independently, or in conjunction with other materials. Measuring devices and squares/ layout tools should be mandatory.

Discussion Questions

1. What could a doghouse look like?
2. Do dogs really need a shelter outside?
3. Do humans need a shelter?
4. What would be some good materials for building a doghouse?



Related Curriculum

Art - Aesthetics

Language Arts – Written and oral presentations

Mathematics – Measurement and scale

Science – Material properties and animal characteristics

Architecture – Structure design

Social Studies – correlation between humans and people

Correlation to Pennsylvania Technology Standards

3.3.4 A Describe the basic needs of plants and animals

3.4.4 A Know different material characteristics

Name _____

Date _____



Doghouse Design!

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OUTDOOR

INSULATION

WOOD

METAL

PLASTIC

DESIGN

WALLS

ROOF

FLOOR

MEASURING

TOOLS

CLEAN

PROTECTION

WEATHER

FOOD

WATER

SAFE

SCALE

ENTRANCE

OFFSET

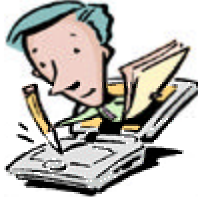
Name: _____

Date: _____

Project Title: _____

Grade: _____

Doghouse Design!



Process (Worksheets)	Below Avg.	Satisfactory	Excellent
1. Has clear vision of final product in design	1, 2, 3	4, 5, 6	7, 8, 9
2. Proper paperwork to complete project	1, 2, 3	4, 5, 6	7, 8, 9
3. Managed time wisely	1, 2, 3	4, 5, 6	7, 8, 9
4. Acquired needed knowledge base through research of both materials and dog's attributes	1, 2, 3	4, 5, 6	7, 8, 9
5. Organization of project and presentation	1, 2, 3	4, 5, 6	7, 8, 9
Product (Project)	Below Avg.	Satisfactory	Excellent
1. Accurateness of design including scale	1, 2, 3	4, 5, 6	7, 8, 9
2. Mechanics of speaking/writing	1, 2, 3	4, 5, 6	7, 8, 9
3. Aesthetics	1, 2, 3	4, 5, 6	7, 8, 9
4. Creativity	1, 2, 3	4, 5, 6	7, 8, 9
5. Demonstrates knowledge of design	1, 2, 3	4, 5, 6	7, 8, 9, 10
6. Overall folio, presentation, and project	1, 2, 3	4, 5, 6	7, 8, 9

Total Score: _____/100

Teacher(s) Comments:

Name: _____

Answer the following questions. Use complete sentences.

Why do humans need shelter? _____

Why does your pet need shelter? _____

What do you think you did really well on your project? _____

What could you have improved and how could you have improved that? _____

What materials did you build your model doghouse of and why did you choose those materials? _____



The Great Technology Adventure

Technology Learning Activity

Doghouse Design

Situation



Your new family pet is a dog. The dog's name is _____.

Because the dog is going to grow rather large it may have to be kept safe outside, maybe in your backyard. Because you want your new best friend to be safe, warm, and dry you will need to build a house for him or her. Dogs must have clean, protected water available all the time and a safe place for food.

Challenge

Begin your activity by doing a little research. Look at animal magazines, books, and articles; or search the web. Investigate different breeds of dogs and what type of environment they like. Decide sizes and a style that will be the best for your breed of dog. Remember, a house too big will be cold in the winter; one too small will be too cramped for your pet to be comfortable. You will present your doghouse to the class.

Criteria

- There should be a place for water and possibly food.
- Your dog must be able to easily enter and exit the house
- The dimensions of the house must be proportionate to your dog
- Sketches must be neat, and include dimensions (remember these are only ideas, the dimensions may change)
- The house must protect your dog from all the elements especially wind and rain
- Your model does not have to be made of the materials a real doghouse would be made of, but you should make it look like them by decorating.



To Do

1. Sketch four possible solutions with scaled dimensions with worksheet.
2. Make a final drawing of your design.
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Resources

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Key Words

Scale

Structure

Dimension

Design

Insulation