

## Pet Robot

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**Problem** Little Susie wants the companionship of a pet but the apartment she lives in does not allow pets for cleanliness reasons. However, there are no rules against having robotic pets. You need to create a robotic pet that can give Susie some companionship.

**Lesson Summary** *The students will design, create and build a robotic pet using different parts of the [Hummingbird kit](#).*

### Major Topic and SOL

Math SOL (2009)	5.11, 5.12, 5.13, 5.14
Science SOL (2010)	5.1, 5.2, 5.3
Reading (2010)	5.7

**Length of Time** 4 weeks for 45 minutes daily

### Student Objectives

- The students will identify the parts of the [Hummingbird kit](#).
- The students will identify the functions of parts of the Hummingbird Kits.
- The students will work in groups to creatively design an appropriate robotic pet. The students will create and build a working model of the robotic pet for Susie.
- The students will create a poster, commercial, or presentation in order to persuade Susie to buy their particular pet over the competing pets.

### 21<sup>st</sup> Century Skills

- Critical-Thinking and Problem Solving
- Communication
- Creativity and Innovation
- Collaboration
- Information and Media Literacy
- Contextual Learning

### Assessment Evidence

- Rubric
- Teacher observation
- “Persuasive” form of media - final PowerPoint or presentation

### Supplies/Materials/Technology

- recyclable materials
- hot glue gun and glue
- tape
- computers
- [Hummingbird Duo kits](#)

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- other materials depend upon the students' pet choice and how they construct it
- There are no material restrictions for this project. The students can bring in things they need for the project that are not provided by the teacher.
- **TEAM** badges (not included) for group roles (**T**ester/timekeeper, **E**lectronic specialist, **A**uthor/illustrator, **M**aterials manager) – these should be rotated every work period.
- iPod

**Week 1:**

- The teacher will introduce the Hummingbird Duo kits and display some working projects.
- The teacher will discuss the parts and functions.
- The teacher will model using the parts of the kits using the teacher made flipchart and Promethean board (not included).
- The students will explore using some of the parts of the kit. The students will work in groups of 4 using the TEAM roles, changing to a new role every work period so everyone can be each part.

**Week 2:**

- In groups of 4 the students will brainstorm, design and draw a model of a robotic animal of their choice.
- The students will list the materials needed. The materials manager in the group will explore the classroom for the needed materials.
- If there is anything the students need for their robot they can bring in those items from home with their parents' permission.

**Week 3:**

- The students will construct, test, and redesign models with assistance from the teacher.

**Week 4:**

- When the students' robotic pets are complete they will work on a persuasive form of media to try and sell their robot to Susie. This could be a commercial done using the video camera/Ipod touch. A PowerPoint constructed using the computer. A poster, a skit, a comic strip...it is up to the groups to decide how they want to try and "sell" this item.
- The students will then assess each group using the teacher made rubric.

Student name: \_\_\_\_\_

### Robotic Pet Rubric for STEM

	3	2	1
Functions	The robotic pet has more than 1 programmed function.	The robotic pet has 1 programmed function.	The robotic pet has 0 programmed functions.
Participation	The student worked extremely hard creating the robot.	The student worked some at creating the robot.	The student worked a little at creating the robot.
Creativity	The robotic pet is very creative.	The robotic pet is somewhat creative.	The robotic pet is not creative.
Collaboration	The teamwork is evident and there was no arguing.	There was some teamwork and little arguing.	There was a lot of arguing and the teacher had to intervene several times.