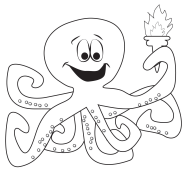
LESSON PLAN, Fired Up Activity 1: FOLLOWING DIRECTIONS



GRADE: 4th Grade

OVERVIEW:
A critical component of understanding and utilizing computers is that computers follow a set of directions exactly. Unlike humans, computers are not able to interpret what one says. The ability to communicate a set of directions to other humans in a precise way is a precursor to being able to communicate a set of directions to a computer. The purpose of this exercise is to strengthen students' skills in following directions from other humans, including the specific skills listed in the objectives below. The end goal is for this to be a stepping stone that students use in their quest to make the computer do what they want it to.

OBJECTIVES:
Students will practice listening, following directions, and sequence skills by making an origami whale.

MATERIALS: One piece of square or rectangular paper, one sheet of directions for each student. If the paper is rectangular, then you need scissors and extra directions to make students cut their paper to be a square. If you are allowing students to make a second animal if they are done early (a frog is another easy one), then you will need extra paper and instructions.

OPTIONAL: Students may color one side of their whale blue prior to folding if the paper is not already colored.

DIRECTIONS:
1. Begin by asking students different ways that people have helped them learn things. For example, they might have read a book with words, they might have watched a video, or someone might have shown them. Give an example of how you taught something in class – you demonstrated two examples, and then they tried it themselves. Try to elicit different ways of teaching / learning things
    a. Teacher demonstrates, students copy
    b. Teacher demonstrates, students copy, teacher gives feedback as to what student is doing wrong – interactive help
    c. Student watches a video, tries it on his/her own
    d. Student reads a book with pictures.

e. Student reads a book without pictures

2. Explore the different methods and try to decide which are the easiest ways to learn, and which are the hardest ways to learn how to do something.
3. Computers don't get to look at pictures, watch videos, or have someone give htem feedback on what they're doing wrong. Computers can only follow a set of written directions. Let's try doing something from only written instructions. Explain that during this exercise, you will not be giving any additional assistance, for example confirming that they are correct or explaining the directions. Their job is to, only using the written instructions, figure out how to create their origami whale.
4. Pass out the paper and instructions for folding the paper whale.
5. Observe and provide encouragement, but do not confirm correctness (until completion).

REFLECTIONS:
At the conclusion of your activity, pass out the following worksheet to the students so that they can reflect on the challenge and benefits of following directions without clarification from others.

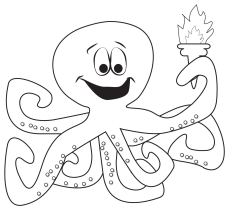
STANDARDS:
This activity could be done after/during studying Ecosystems/ Environmental Changes (Scott-Foresman Science page 157) as an art lesson, or as a math

Science: 4LS3.0 Living organisms depend on one another and on their environment for survival. As a basis for understanding this concept:

4LS3.b Students know that in a particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.

Systematic ELD: Lesson 5.19 Express Action & Time Relationships

FiredUp Activity 1: Making an Origami Whale



If you have a rectangular piece of paper, you first need to make it a square.

Making a square piece of paper:
1) Fold the top-right corner over to the left side of the paper. Position it so that it folds exactly at the top-left corner, and the side that used to be the top of the paper is flat against the left side of the paper.
2) There will be a rectangle left at the bottom. Fold that up so the fold is along the bottom of the triangle you created.
3) Cut off that bottom rectangle.
4) When you unfold the paper, you will have a square. You will also have already completed step 1 below.

Once you have a square piece of paper:
1) Position the paper so it looks like a diamond. Fold the left point over to meet the right point, and open it up again to diamond shape. You should see a line (crease) caused by your fold that goes straight from the bottom corner to the top corner.
2) Take the right-hand corner and bring it to the center crease, up high enough so the paper is flat from the bottom corner to this corner. Do the same with the left-hand corner.
3) Fold the top point corner down to meet the other two corners at the center crease.
4) Fold in half along the original crease, folding the right side over to meet the left side.
5) Rotate the shapes so that the long flat line is at the bottom.
6) Fold up about one inch from the end to form the tail, making the narrow end point to the sky.

Reflections

What was the goal of this activity?

Which step was the hardest for you to figure out and why?