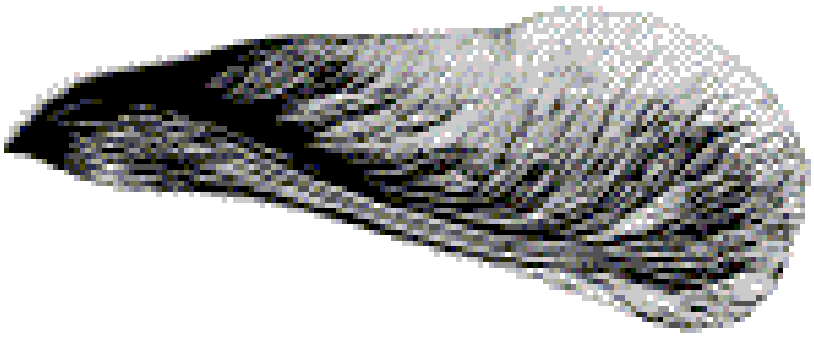
Student's Name: _____

Group's Name _____

Teacher's name _____

The MapleCopter



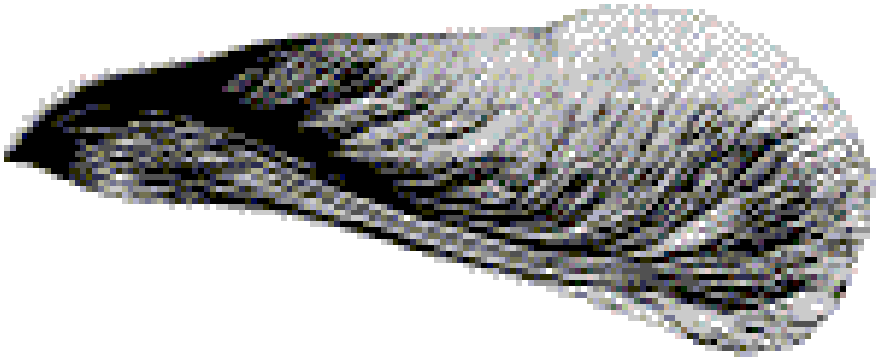
An Integrated Science–Technology-Math Investigation for Elementary School Students

Written by Dr. Michal Lomask

CT State Department of Education

Michal Lomask, CSDE, 1994

Part I: Observing Nature



The picture shows an enlargement of a dry maple tree seed that fell to the ground during early summer. You were provided with a bunch of similar seeds. Throw several seeds in the air, one by one, and observe their flight down.

- What do you see? Describe the flight of the “MapleCopter” (the winged maple seed) in words and pictures in the space provided below:

Part II – Measuring with Simple Tools

- How big is the Maplecopter?

Work with your team to find three different ways to describe the size of the Maplecopter. Write your ideas and findings below:

- How fast does the Maplecopter fall?

1. Brainstorm with your group and come with a plan of activities that will provide you the necessary data to answer the question.
2. Perform the planned activities and collect all relevant data in a table.
3. Repeat the measurement several times and calculate the **average** speed of the motion of the seed.
4. Draw a graph to describe your findings

Part III: Building Explanations

Scientists try to explain natural phenomena based on detailed examinations of what they see and the knowledge they have about similar phenomena.

1. With your group, discuss possible explanations for the spinning motion of the seed. Try to connect your explanation to the findings from your measurements.
2. Play with the maple seeds, cut them, glue them, throw them in the air in different directions. What did you learn? Is there a need to change your original explanation?
3. Write down your best explanation by completing the following:

I think that the maple seed spins as it falls down because of----

Part IV: Building Models

Sometimes, while performing science investigations, it is necessary to study different factors separately. In these cases building **models** make the investigation much easier.

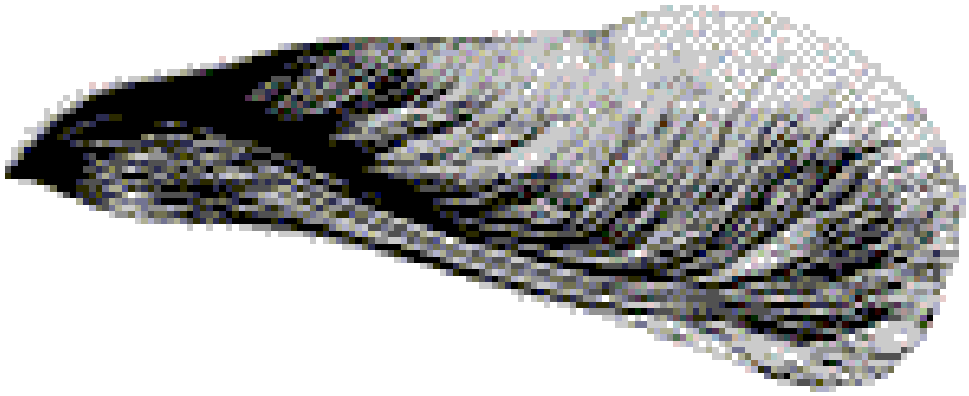
1. With your group brainstorm ideas for appropriate models for the MapleCopter. Think about the size, shape and materials of the model.
2. Draw several models and describe the materials that you plan to use.

3. Build the model and see if you can get it to spin. What did you find?

4. Try to improve your model until it spins. Describe the changes you had to make in order to get the model spins.

Part V: What Did I Learn?

The first grade students are eager to learn about your investigation of the MapleCopters' spinning motion. Write a letter to a first grader. In the letter describe your different investigations and explain why you think a maple seed spins as it falls down.



Michal Lomask, CSDE, 1994