New Jersey Agriculture in the Classroom

Seed Statistics

OVERVIEW: Don't throw away those packages of expired seeds! Have your students do a test to see if they are still viable and practice math skills at all levels.

OBJECTIVE: Grades 1-2

- The student will be able to write and solve number sentences showing the number of seeds that germinated compared to the number of duds that did not sprout . (*This activity can also be used as a learning center.)*

OBJECTIVE: Grades 3-5

The student will be able to

- Use fractions and decimals to show the number of germinated seeds versus duds that did not sprout.

Materials:

Empty egg cartons for each pair or small group of students – ask your students' families to collect them for you at the beginning of the school year
Potting soil
Plastic spoons
Any type of seeds
Note: If you use seeds that are two or more years old, you are more likely to get more duds.

Procedure:

Explain that a seed "germinates" when it begins to push shoots up from the ground. Tell the students that some seeds, for unknown reasons, are duds and simply do not grow. Tell students that today they are going to do an experiment to see how many seeds germinate and how many seeds grow out of 12 seeds. (Older students can use a larger number or groups can vary the number they plant.) Explain that the time it takes for a seed to germinate can be found on the back of the seed packet.

In pairs or small groups, students use plastic spoons to scoop potting soil into each cup of an egg carton. Students plant just one seed in each cup and water the seeds lightly.

Students observe the growth of their seeds daily and water as needed. After a little more time has passed than the germination time noted on the seed packet, ask the students to take the egg cartons back to their desks and answer these questions:

Grades 1-2

How many seeds germinated?

How many seeds were duds?

How can we show in a number sentence how many seeds germinated?

How can we show in a number sentence how many were duds?

Grades 3-5, depending on grade level

How many seeds germinated?

How many were duds?

What is the fraction that shows how many seeds germinated?

What is the fraction that shows how many seeds were duds?

Add the germinated fraction plus the dud fraction. What does the result show you?

Show the number of germinated seeds as a decimal.

Show the number of duds as a decimal.

Add the decimal representing seeds germinated to the decimal representing duds. What does the result show you?

EVALUATION: Students will be able to answer the math questions about the seeds.

EXTENSIONS:

Compare the germination rate of some new packages of seeds compared to some that have expired according the date on the package. Do the “expired” seeds germinate? Is the germination rate the same as the new seeds?

Students can let the seedlings continue to grow in the egg cartons and plant them in the school garden, or students can split the egg cartons so that each partner or group member can take some seeds home.

New Jersey Learning Standards

Math: 1.OA 2.OA.B 3.NF.A 4.NF.B,C 5.NF.A