

Activity 1

Small, Smaller, Smallest

- a seed sorting activity

by Darlene Waldie

Study Question:

What is small? What is smaller? What is smallest?

Activity:

Students work in activity centres to construct and use their own seed cleaning sieves. They will compare and classify seeds into “small”, “smaller”, “smallest” categories. This activity can be used as part of a Fall Harvest unit focusing on grain.

Curriculum Fit:

ECS/Kindergarten - Language Arts

- Verbal use of comparative terms, visual discrimination.

ECS/Kindergarten - Math

- Problem solving “How can we sort these?” comparison and classification.

ECS/Kindergarten - Health

- Co-operative learning and social interaction (if materials must be shared).

Grade One - Science

- “Building Things Unit”: Construct objects and models of objects

Agricultural Concepts:

Different seeds are different sizes.
Technology is needed in seed cleaning.

Purpose:

- To teach the concepts of small, smaller, smallest and to develop the child’s ability to discriminate between differences of size.
- To let children know that sorting is a task that adults involved in the agricultural industry regularly have to deal with, especially in seed cleaning operations.
- To develop some degree of muscle control (in a Carpentry Corner setting).

Materials Required:

- Girl and man puppets
- Tin foil pie plates (2 for each child or one for each child if they work as partners)
- A hammer, small nails, medium nails
(or sharp pencil if tools are not available)
- Seeds:
 - lentils - small - from grocery store
 - canola (Argentine type) - smaller - from Alberta Pool
 - alfalfa - smallest - from Alberta Pool (or grass seed)
 - grain table or plastic basins

Time Required:

A full class period with 5-10 minutes set aside for the introductory lesson.

Background - For the Teacher

In the feed, flour and seed industry, grain and seed need to be cleaned to take out dirt, weeds and other unwanted seeds. To accomplish this, the seed is run over a variety of screens to eliminate substances that are bigger or smaller than the specific seed being cleaned.

NOTE!!

If possible, this learning project would be best set up as a Carpentry Corner activity and a Seed Cleaning Corner activity. To facilitate these activities, a number of carpentry and seed cleaning centres should be set up so that there are not too many children in a single location at one time.

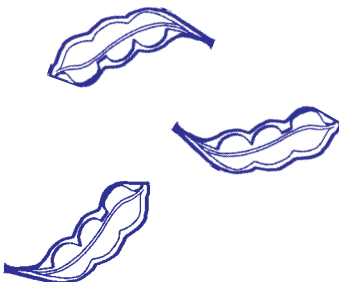
Procedure:

Preparation

1. Set up a "carpentry corner" containing pie plates (tin foil type turkey pie size would be sufficient) hammer, nails (some big enough to make a hole to let an alfalfa seed pass through, but small enough that a canola seed cannot pass through, and others big enough to make a hole for a canola seed to pass through but not a lentil).
2. Set up a grain sorting center using either a grain table or plastic basins (near carpentry center if possible). Have basins for the children to put their separated seeds into.

Introduction

3. Introduce this activity with the puppet play (see included Teacher Resource sheet).



Activity

4. **Activity A: At the Carpentry Corner**
Students each put their names on 2 pie plates. On one of the plates, use a hammer and nails (or sharp pencil) to poke in holes that are big enough to let Argentine canola fall through but small enough that lentils will not fall through. For the other pie plate poke in holes which are small enough to keep canola in the pan while they let alfalfa fall through. Provide a few seeds here in the carpentry corner to help the children judge the size of holes needed. This will be a trial and error - or a trial and success! - activity. Either way, it is a learning experience.

5. **Activity B: At the Seed Cleaning Corner/ Grain Table**

The children will use their hand-made "screens" at the grain table. If their holes are workable they will separate seeds. Provide containers for separated seed. The unseparated seed can stay at the grain table.



Conclusion:

6. Near the end of the day have "Sam" the puppet return to ask the children their experiences with "seed sorting".

Discussion Questions:

1. What did you learn from Sam in the Carpenter's Corner? In the Seed Cleaning Corner?
2. Why do you think it is important for farmers to make and use sieves for cleaning seeds?
3. What do you think the seeds you cleaned are used for?
4. What other types of seeds can you think of that a farmer might have to sort into small, smaller, and smallest?
5. What other things on the farm can be sorted and why do you think the farmer would want to sort them? Plants? Animals? Equipment? Tools?

Evaluation Strategy

1. Evaluate the students on their willingness to participate and, if working in groups, their willingness to co-operate.
2. This activity will bring out the child's ability to discriminate between objects and their inherent qualities, ie, size, shape, colour, texture, etc.
3. The activity will offer the opportunity to evaluate the child's ability to problem-solve and to analyze how things work.

Related Activities

1. Have the children go on an outing of their own, to a field, into their parents garage, into the basement, into Gramma's attic and have them collect things that can be classified into categories of small, smaller and smallest. Have them bring in and explain their finds for "Show and Tell".
2. Plan a fieldtrip to a seed cleaning plant or a grain elevator to see how and why seed cleaning is really done.
3. Make a collage depicting the theme of "small, smaller, smallest" using seeds and other objects.



TEACHER RESOURCE

PUPPET PLAY

Introduce the puppets:

Sam: Hi! My name is Sam. I work over at the grain elevator near the railroad tracks. Farmers bring their grain to the elevator and it is my job to check the grain and make sure that it is clean. What is that noise? (*sobbing heard off stage*). I wonder who it is? Molly! My neighbour! Whatever is the matter? Where is that cheerful smile of yours?

Molly: I made a big mistake in kindergarten and now I have to go home.

Sam: When you make a mistake you don't have to go home. You simply stay and fix the mistake and if you need help, you ask for it. There is a poem my dad taught me: "If at first you don't succeed
Try, try, try again!"
Got that? Say it with me. (*Prompts the class*)

Sam: That was pretty quiet! Boys and girls, help Molly say that again. "If at first you don't succeed. Try, try, try again."
That's better. Now, Molly what was that problem?

Molly: My teacher had a basin full of lentils. They look like this (*hold a lentil up*). She had some other seeds in a bag; canola and alfalfa seeds. I went to look in the bag and it slipped and the seed fell into the lentils and now they are all mixed up. How can I fix that? I already tried, should I try again?

Sam: Did you ask anyone for help?

Molly: No.

Sam: Maybe you should ask someone to help you.

Molly: Who could I ask?

Sam: Well, the boys and girls that I see here look like good helpers, and there is your teacher. You could ask her for help. Today, you could even ask me for help - for a little while. I have to get to work soon.

Molly: Would you help me?

Sam: I could tell you what we do at the elevator and what they do at seed cleaning plants. We use screens.

Molly: How do you use a screen?

Sam: Screens have holes in them. We put our seeds on the screen and bits of dirt or the smallest seeds fall through the holes. Then we get a different size screen - a little bigger and sort some more.

Molly: Could I use your screen, Sam?

Sam: I don't have it with me here, but I bet you could make your own.

Molly: Make my own? How?

Sam: Well, I see some silver containers over there. Maybe you could ask your teacher if you could have a couple of them.

Molly: Those are tin foil pie plates. They don't have any holes in them.

Sam: You could make some holes in them that would work. If any of you can think of a way to poke some little holes in this plate would you put your hand up and share your ideas with us?

(*People in class respond*).

Sam: Molly, it looks like you have lots of people who could help you. I have to get to work now. I'll come back at the end of the day and see how you did.

Molly: Thank you for your help, Sam. Goodbye!

Sam: See you all. Happy sorting.

Molly: (gives your specific directions for the center) ie. I know you have a lot of things to do but could two of you help me make a screen. When we're finished some of the rest of you can have a turn making a screen for yourself and helping sort seeds. See you!

An Adaptable Concluding Puppet Conversation
(Near the end of project)

Molly: Hi, Sam!

Sam: Hi, Molly! I'm happy to see you looking your cheerful old self. How did your seed sorting go this morning?

Molly: Great! We made our sieves first. (Child's name), tell Sam how you made your sieve.

(*Child from the class responds to the question.*)

Sam: That was a good idea. How did it work?

(*Child responds. If that child's sieve didn't really sort the seeds then have Sam ask another child whose sieve you are sure worked, respond to the question.*)

Sam: It sounds like you have been wonderful helpers. Thank you for helping Molly.