

Activity 3



GERMINATING SEEDS



STUDY QUESTION:

If I plant 10 seeds will all of them grow?

THE ACTIVITY:

In this activity the children sprout grain seeds. Grain seeds or large vegetable seeds are best for this activity.

CURRICULUM CONCEPTS:

Grade One Science:

General Learner Expectations

1-1 Bring focus to investigative activities, based on their own questions and those of others.

1-2 Describe materials and objects that have been observed and manipulated, and identify what was done and found out.

Topic B: Seasonal Changes - General Learner Expectations

1-6 Describe seasonal changes, and interpret the effects of seasonal changes on living things.

Topic E: Needs of Animals and Plants - General Learner Expectations

1-11 Describe some common living things, and identify needs of those living things.



Grade One Language Arts:

1.1 Discover and Explore

- talk with others about something recently learned
- make observations about activities, experiences with oral, print and other media texts

2.4 Create Original Text

- generate and contribute ideas for individual or group oral, print and other media texts

AGRICULTURE CONCEPTS:

Germination as a stage in plant growth: moisture as a condition of germination.

PURPOSE

To introduce children to the beginning and very important stage in plant life.
To give children the opportunity to further develop their language skills they learn.

MATERIALS REQUIRED:

Poem about germination. Supplied in this activity.
Approximately 100 seeds from a seed package.
Shallow pans; paper towels or blotting paper.
Fact sheet on germination and minimal clues task sheet. Supplied in this activity.

TIME REQUIRED:

To Start: One Class Period.
While Seeds Grow: 15 minutes per day for a week.
To Finish: One Class Period.

PROCEDURE

Part One

Introduction

Give the children one or two seeds to hold in their hands. Read the germination poem to the children to get them interested and give some information to them before starting the activity.

Part Two

Preparation

Form small groups and give each group 10 seeds to germinate. Have the children thoroughly wet their paper towels and place them in shallow pans then place their seeds on the wet paper towels. Cover them lightly with plastic wrap to prevent evaporation. Put one set of seeds on a dry towel as a "control".

Part Three

Care of Seeds Recording

Have the children keep the paper towels moist, observe their seeds daily, and count the numbers that have sprouted each day. Have each group record their number on the board; add them and record the total number on a chart such as the one illustrated below. When no more seeds are sprouting (4 - 6 days for grain) discard the seeds. When children are doing this activity they could keep their own records of the changes on their own data sheet. (A sample is supplied for their use.)

Sprouting Seeds On Wet Paper

First day (Monday): We set our seeds on wet paper towels.
Second day (): _____ seeds have sprouted.
Third day (): _____ seeds have sprouted.
Fourth day (): _____ seeds have sprouted.
Fifth day (): _____ seeds have sprouted.

Dry Seeds

First day (Monday): We placed one set of seeds on a dry paper towel.
Fifth day (): _____ of these seeds have sprouted.

Part Four

Conclusion

Discuss the results in relation to factors that support germination e.g. moisture, temperature, age and size of seed.

FOR DISCUSSION

What conditions are needed for seeds to grow?

Why did the seeds on the dry paper not grow?

Why is moisture so important to the growth?

Is water an important part of the lives of other living things?

EVALUATION STRATEGIES Use the “Our Seed Story” as a method of evaluation.

RELATED ACTIVITIES

1. Use the minimal clues task sheet as a means of reviewing the activity while developing skills in using context and experience to identify words.
2. Have children draw and label simple diagrams of their sprouting seeds.
3. Invite someone from a seed cleaning plant to show the children how grain is cleaned and graded, or visit such a plant.
4. Visit an elevator.



TEACHER RESOURCE

STARTING OUT

A little seed must have a moist warm lair,
so he will need lots of tender loving care.

If the seed ever gets too cold or too dry,
he will not be able to grow and will die.

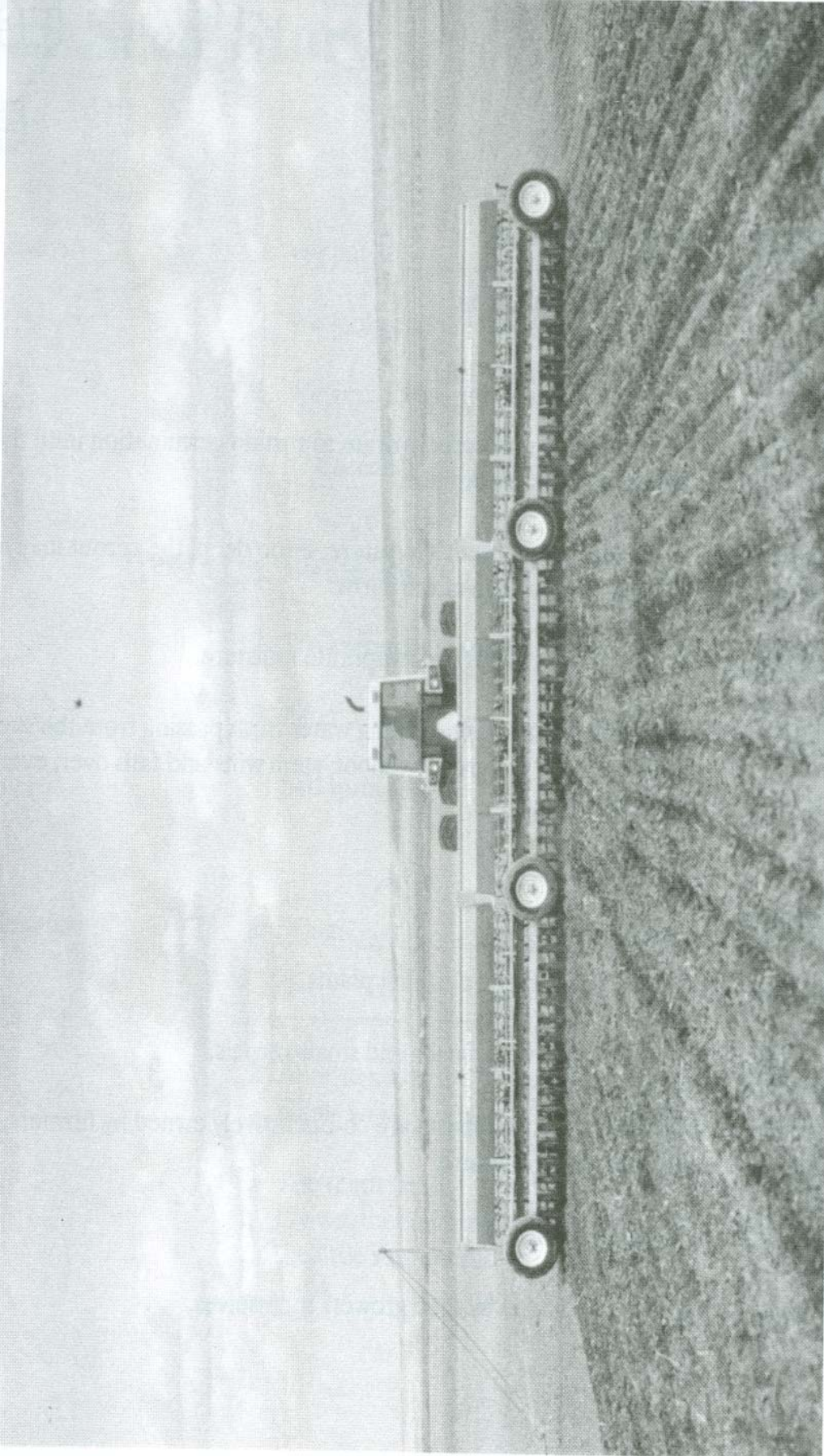
However, if the growing conditions are right,
the seed will sprout out with all its might.

The success of the seeds depends on the weather
because they are as fragile as a feather.

So, all the farmer's pray for rain and heat
to start the seeds off on the right beat.

Though, Mother Nature makes up her own mind,
whether or not she wants to be kind.

author - C.G. Bibby



A farmer uses a seed drill to plant his seeds.

TEACHER RESOURCE

Seeds



Factors Which Influence Germination

- Moisture - Essential to germination.
- Age of seed - Older seed is less viable.
- Size of seed - Big seed has more carbohydrate to sustain germination until the sprout reaches the surface.
- Depth of seed - Covered seed retains moisture; if too deep, the sprout may not reach the surface of the earth.
- Temperature - Warm but not enough to evaporate moisture.
- Diseases - Can suffocate a plant, preventing water from passing from the seed germ up through the growing shoot; stem wilts and falls over, even if it reaches the surface.

Seed Cleaning

- Cleaning and grading occurs at seed cleaning plants.
- The cleaning process removes weed seeds and small kernels.
- Many seed cleaning plants across Alberta are co-operatively owned by farmers, municipalities, and Alberta Agriculture.
- Some plants are privately owned.
- Cleaning and grading is also done by seed growers themselves.

STUDENT RESOURCE

Our Seed Story



Summary:

1. We put 10 _____ on a wet paper towel.
 2. We looked at the seeds every _____.
 3. We kept the paper towels _____.
 4. The seeds began sprouting in _____ days.
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1. We also put 10 _____ on a dry paper towel.
 2. We looked at them every _____ too.
 3. After 5 days _____ of these _____ had sprouted.

Conclusions:

1. When _____ are planted, only some of them _____.
2. A farmer uses the best seeds he can get so that many plants will _____ in his field.
3. The seeds need _____ to start growing. In dry weather a farmer may have to wait for rain to help the little seeds come up.

STUDENT RESOURCE



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