



## Exploring Seeds

### Recommended Grades

Kindergarten, Grade 1, Grade 2, Grade 3  
Could be expanded to older grades

### Curriculum Connections:

#### Earth Systems

- K – how environments can be explored, environments include plants, changes in environment can be observed, ways environment can be protected
- 1 – seasonal changes in plants, responsibility to care for environments
- 2 – components of Earth include plants, only planet known to support life
- 3 – human activities can change the Earth’s surface, could link to soils

#### Living Systems

- 1 – how do plants survive (exist in all shapes and sizes, basic needs of plants, ways humans can meet needs and ways plants help humans)
- 2 – how do plants live and grow (role of human behaviour, offspring of plants, lifecycle of plants)
- 3 – plants and animals interact, plants responding to water, temperature, and light, plants depend of environment for survival

### Time

30 minutes for set up and lesson, daily follow up ~5 minutes

### Skills Focused On

<ul style="list-style-type: none"> <li>• Critical Thinking</li> <li>• Hypothesizing</li> <li>• Observation</li> </ul>	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Problem-solving</li> <li>• Resourcefulness</li> </ul>
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### Materials Needed

<ul style="list-style-type: none"> <li>• Seeds – bean seeds are a good option due to the size and relatively fast germination rate, however could add species exploration as a level to the experiment so would need a variety of species</li> <li>• Ziploc</li> <li>• Paper towels</li> <li>• Water</li> <li>• Optional – container to put seeds in</li> <li>• Data sheet</li> </ul>
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### Data Sheets

Any or all of the following data sheets can you used. Teachers can also adapt them to better fit their class needs.

- Germination Monitoring Sheet
- Germination Rate
- Germination Observation Sheet
- 5 Seed Graph and Table
- 10 Seed Graph and Table

### Additional Resources

Journey of a Seed experimental video produced by Future Energy Systems - provides background information and instructions for experiment: <https://youtu.be/0fAcw1B-nqM>.

Learn more about Future Energy Systems (<https://www.futureenergysystems.ca/>) and access more learning content, including storytimes, lab tours, ask an experts and more (<https://www.futureenergysystems.ca/engage/learning> <https://www.youtube.com/channel/UCJr8N9KyFJ6d-t36TPtUlwg>).

**THE JOURNEY OF A SEED: GERMINATION MONITORING SHEET**

Count the number of seeds germinated on each day and then you can remove the germinated seeds. They can be planted or disposed of. You will need to add all the days together at the end.

Date	Species or Condition*
<b>Total Number Germinated (add the seeds from all days)</b>	

\*Condition refers to differences in experimental set up. For example were seeds stored in light or darkness, warm or cold, etc. You are looking for differences in germination rate based on differences in your experiment, based on the different species you used or the different conditions you placed the seeds in.

### JOURNEY OF A SEED: GERMINATION RATE CALCULATION

Species or Condition*	Total Number of Seeds Germinated	Total Number of Seeds	Germination Rate (%)

\*Condition refers to differences in experimental set up. For example were seeds stored in light or darkness, warm or cold, etc. You are looking for differences in germination rate based on differences in your experiment, based on the different species you used or the different conditions you placed the seeds in.

To calculate germination rate, use this equation (Total Number of Seeds Germinated / Total Number of Seeds) x 100%

Name:

Species:

How many seeds did you start with:

Where did you place you seeds:

Date	Observations – Number of Seeds Germinating, Is It Drying Out, Are Seeds Healthy?

How many seeds germinated:

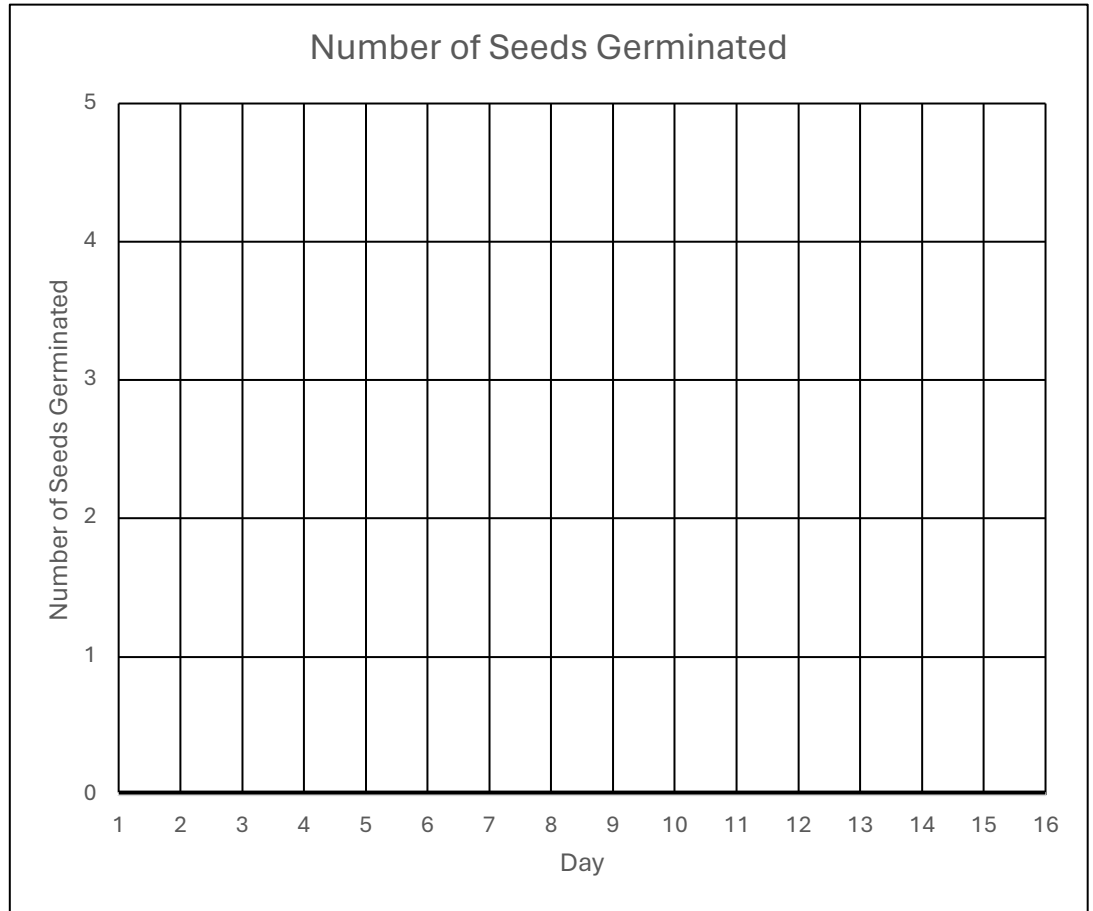
How long did it take for seeds to finish germinating:

Name:

Species:

Where Did You Put Your Seeds  
(dark, light, window, cupboard):

Day	Number of Seeds Germinated
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	



Name:

Species you are exploring:

Where are your seeds:

Day	Number of Seeds Germinated
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

