

SEED DISPERSAL

Dice Simulation
with Writing Connection

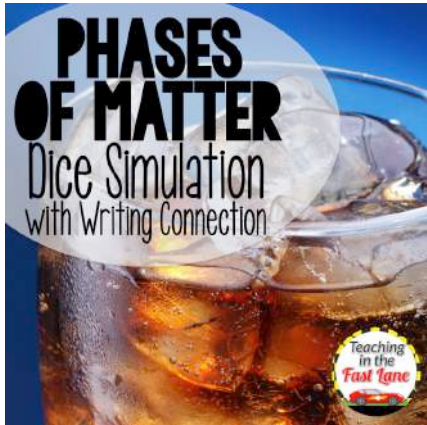
Teaching
in the
Fast Lane



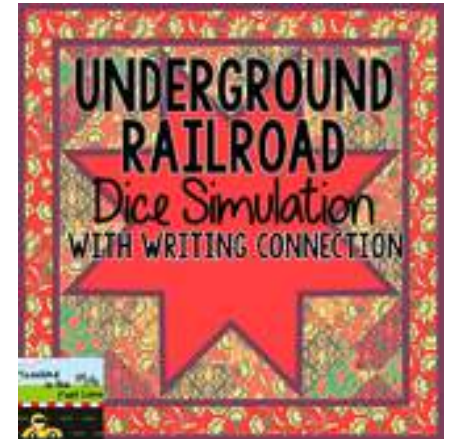
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Teaching in the Fast Lane

FOR MORE SIMULATIONS!



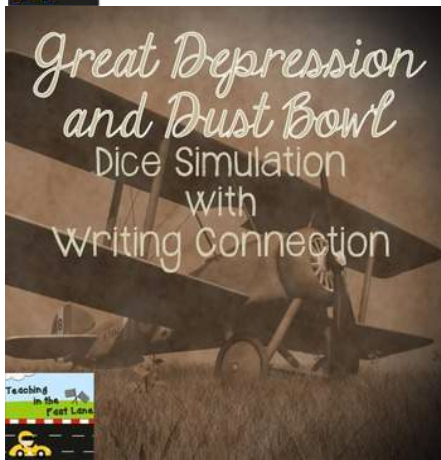
TURKEY IN HIDING
Dice Simulation
AND WRITING CONNECTION



CIRCULATION OF A DOLLAR
Dice Simulation
AND WRITING CONNECTION



REINDEER GAMES
Dice Simulation
AND WRITING CONNECTION



MANY MORE TO COME!

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INCLUDED IN THIS PRODUCT:

- Teacher and student directions for simulation
- Recording sheet
- Sample recording sheet
- Teacher directions for narrative
- Sample narrative based on sample recording sheet
- Rubric for narrative
- Signs for each location with directions
 - For larger classes, I would make multiple copies of each poster and directions, so that lines at each don't get too long.

****You will need six dice to complete this simulation. I recommend the large foam dice that can be found at the dollar store.****

NOTE TO TEACHER

This is a simulation meant to reinforce students' knowledge of the different ways that seeds can be dispersed throughout an environment. This simulation is a great way to connect science and writing within your curriculum.

TEACHER DIRECTIONS FOR SIMULATION

- Print and laminate each of the location signs and student directions.
- Hang the location signs and student directions around your classroom and place one die by each poster.
- Hand out recording sheets to students and review the directions with them:
 - Directions are found on the next page
- Monitor students as they travel around the classroom during the simulation and complete their recording sheet.
- Assign students to their starting location.
 - I do this by numbering students off #1-6 and assign them to the following locations:
 - 1. A Plant
 - 2. In the Wind
 - 3. Eaten by an Animal
 - 4. Carried by Water
 - 5. On the Ground
 - 6. In the Soil

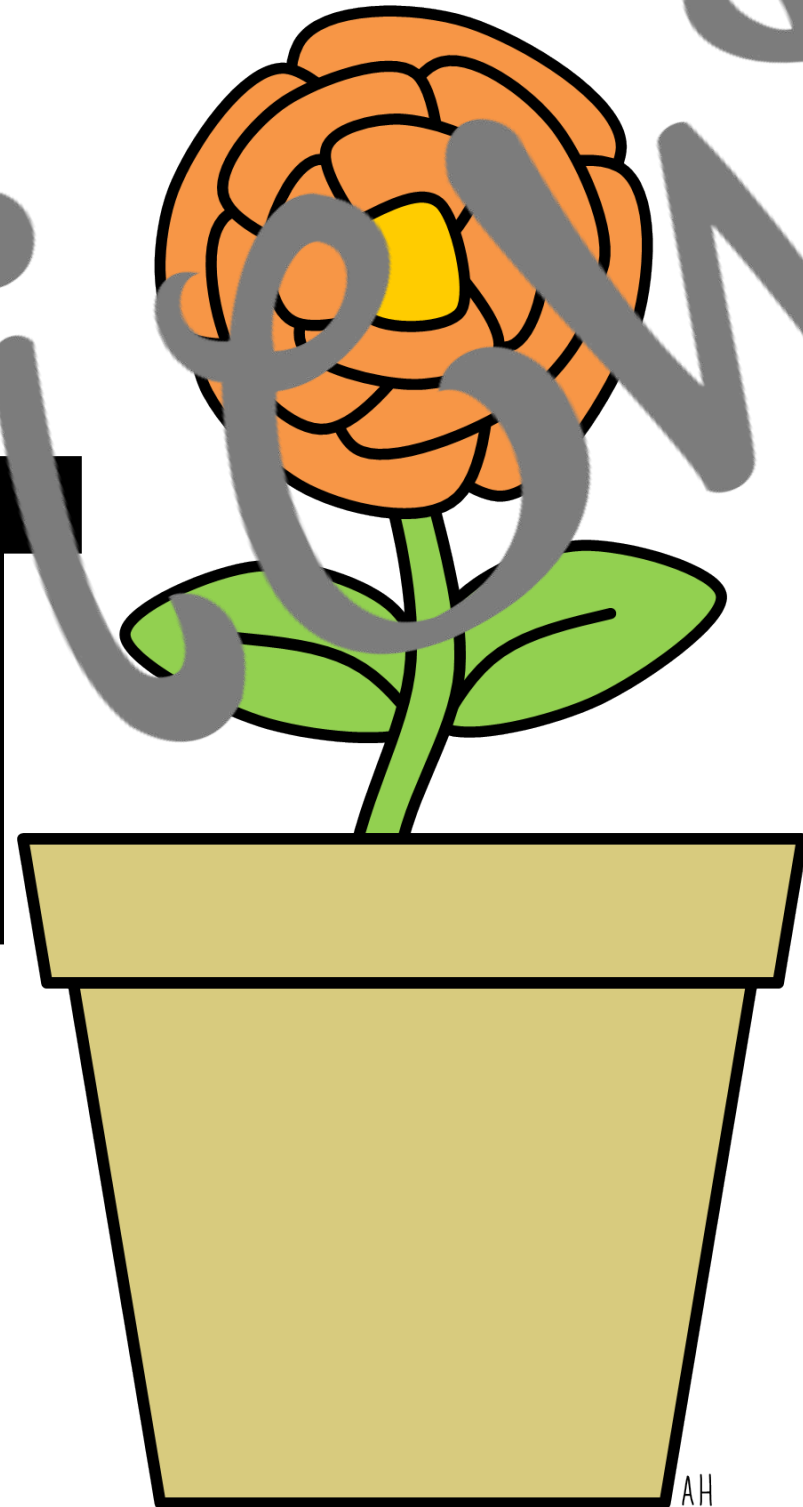
DIRECTIONS FOR SIMULATION

- After each student has their starting location, they should begin to circulate.
- At each location, roll the die and read the event associated with the number rolled. Use the underlined words to record your progress and travel to the next location.
- Once you have established your location, travel there quietly and wait in line to roll the die.
 - If your directive is to stay in the same location, then go to the end of the line and take another turn rolling the die.

Students should continue to travel from location to location until they complete their recording sheet or time is up.

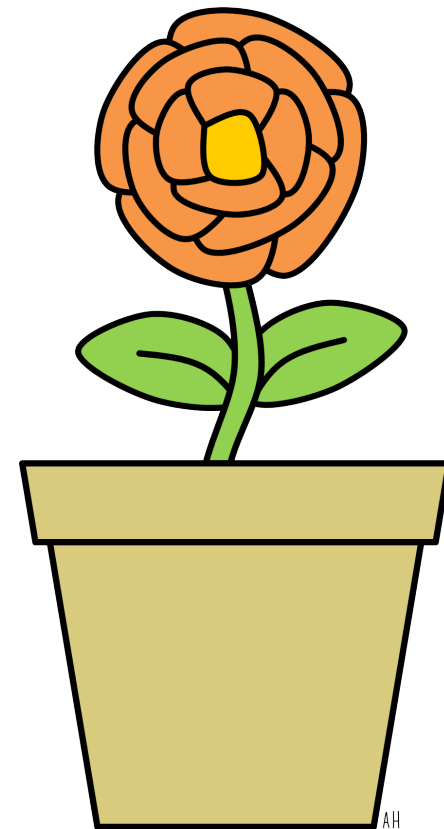
- I would recommend allowing students to complete the simulation for about 10-15 minutes.

A
PLANT



A PLANT

1. You feel a breeze and get blown away in the wind.
2. A horse comes upon you and you are eaten by an animal.
3. A storm begins and you are carried away by water.
4. You fall into the ground.
5. You are not ready yet, stay in a plant.
6. The plant decomposes and you become part of the soil.



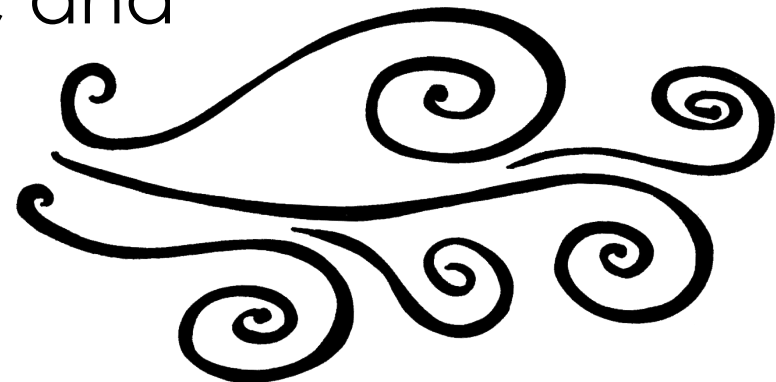
IN THE

WIND



IN THE WIND

1. The wind is quite strong today, and you remain in the wind.
2. You fall onto the ground.
3. You get stuck in a spider web and are eaten by an animal.
4. A storm emerges and you are carried away by water.
5. You fall onto the ground.
6. You are mixed with sediment, and become part of the soil.



EATEN BY

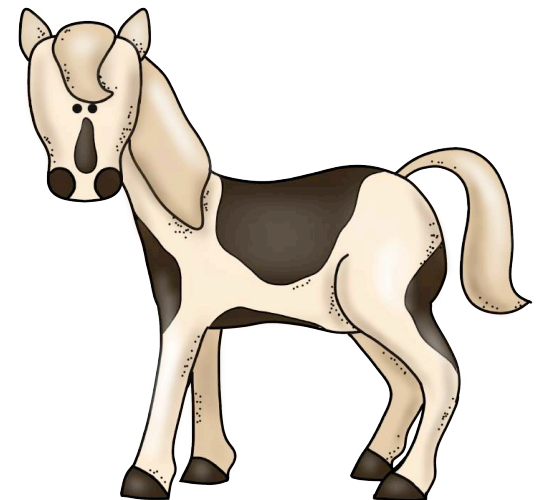
AN

ANIMAL



EATEN BY AN ANIMAL

1. After passing through the animal you are left on the ground.
2. You become part of the soil.
3. You are spit back out while the animal is drinking and carried away by water.
4. You are blown out of the animal's mouth and into the wind.
5. After passing through the animal you are left on the ground.
6. You are spit back out while the animal is drinking and carried away by water.



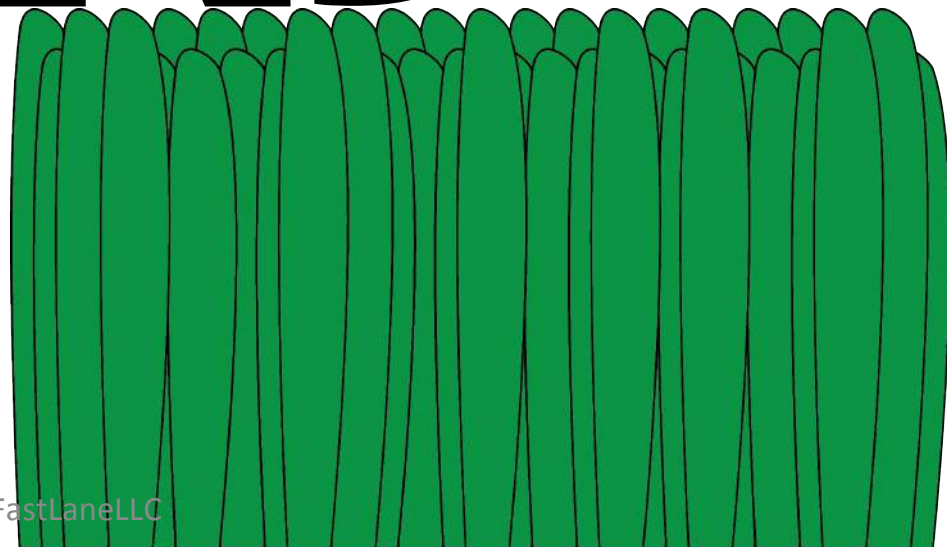


CARRIED BY WATER

1. You are left at the banks of a river on the ground.
2. You are eaten by an animal drinking from the river.
3. The water is moving quickly and you continue to be carried by water down the river.
4. You get mixed with the river silt and become part of the soil.
5. You are eaten by an animal drinking from the river.
6. You are left at the banks of a river on the ground.

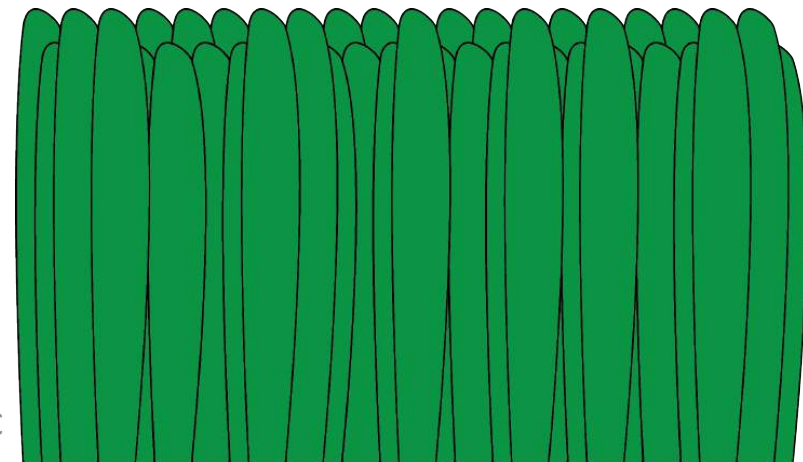


ON THE GROWING



ON THE GROUND

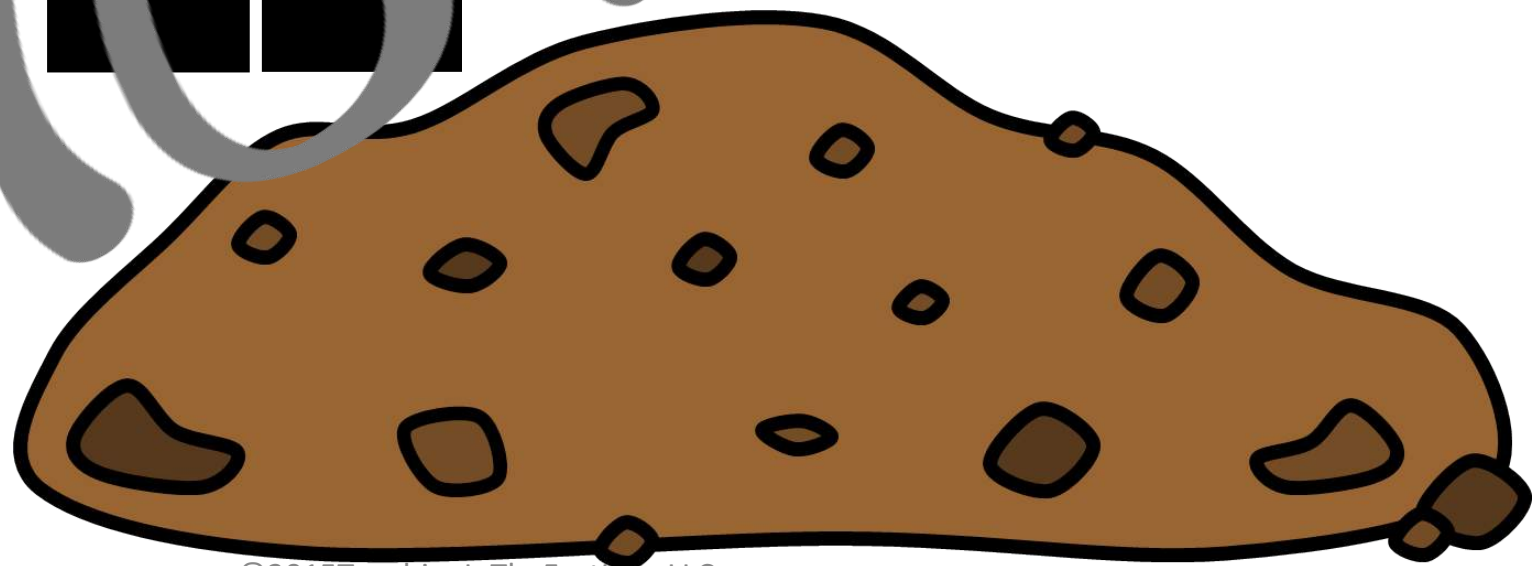
1. You are eaten by an animal along with some grass.
2. A storm comes and you are carried away by water.
3. A strong breeze comes and you are in the wind.
4. You are trampled into the soil.
5. You are eaten by an animal along with some grass.
6. A storm comes and you are carried away by water.



IN THE

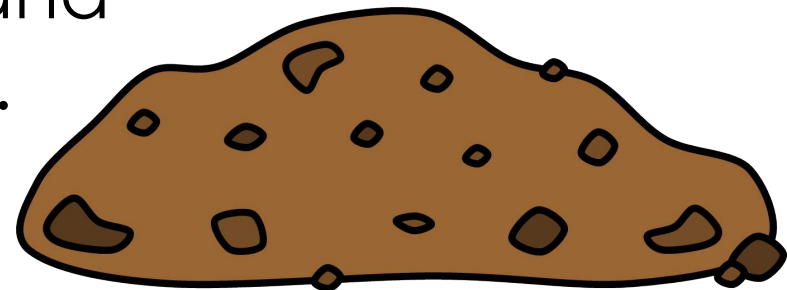
SOIL

Interview



IN THE SOIL

1. A strong breeze turns up the soil, and you find yourself in the wind.
2. You receive the proper water and nutrients and grow into a plant.
3. A flood comes and you are carried away by water.
4. You receive the proper water and nutrients and grow into a plant.
5. A flood comes and you are carried away by water.
6. You receive the proper water and nutrients and grow into a plant.



Name_____ #_____ Date_____

SEED DISPERSAL DICE SIMULATION

| | | | |
|----|-------|-----|--|
| 1 | Begin | 1 1 | |
| 2 | | 12 | |
| 3 | | 13 | |
| 4 | | 14 | |
| 5 | | 15 | |
| 6 | | 16 | |
| 7 | | 17 | |
| 8 | | 18 | |
| 9 | | 19 | |
| 10 | | 20 | |

SAMPLE RECORDING SHEET FOR SEED DISPERSAL DICE SIMULATION

| | | | |
|----|-----------------------|----|-----------------------|
| 1 | Begin a plant | 11 | On the ground |
| 2 | Eaten by an animal | 12 | Eaten by an animal |
| 3 | On the ground | 13 | In the soil |
| 4 | Carried away by water | 14 | Sprout into a plant |
| 5 | In the soil | 15 | On the ground |
| 6 | Sprout into a plant | 16 | Eaten by an animal |
| 7 | Carried away by water | 17 | Carried away by water |
| 8 | On the ground | 18 | Carried away by water |
| 9 | In the wind | 19 | In the soil |
| 10 | In the wind | 20 | Sprout into a plant |

TEACHER DIRECTIONS FOR NARRATIVE

- After completing the dice simulation, students are ready to write a narrative from the point of view of a seed on the journey of dispersal throughout an environment.
- Students should use their recording sheet (the locations they visited) to write a narrative piece about their adventure.
- By following the recording sheet and adding details, students will have a narrative describing their adventure. It is also important for students to use their science vocabulary in the narrative. It is alright for students to not use all of the locations on their recording sheet, but they should include at least five events.
- A rubric for the narrative is included.

SAMPLE NARRATIVE

As the sun rose high in the sky I could feel the flower of my plant reaching higher and higher into the sky to soak up the warm rays. Just as we had achieved the perfect angle to soak up the sun's energy, a large shadow was cast across us. I looked up to see a rather large four-legged being. I tried to warn the others, but before I knew it we were being chewed on by the giant animal.

I was one of the lucky ones, because I fell out of the creature's mouth and onto the ground when it bent down to drink from the river. I was soon washed away by the mighty power of the river. I rather enjoyed the feeling of being carried by the water. I imagined that I traveled quite a long distance in the river, but have no idea how far. The water gradually became more shallow and I felt myself mixing with the silt of the river bottom. Finally, I found myself on the bank of the river surrounded by the silt.

It was here that I found the nutrients necessary to germinate and grow. After many weeks I was a fully formed plant once again. I looked around to see that many of my fellow seed friends had also made the same journey and were all living out their next life as a plant as well.

I grew the most beautiful flower with vibrant shades of red and orange. The following day a bird landed on my petal and knocked me off to the ground. I stayed on the ground in the topsoil for several days. I spent my time hoping to become another plant, but instead I experienced the most divine sensation of being carried by wind. I rose higher and higher into the sky on the wings of the wind. This wonderful feeling lasted for what seemed like an eternity, but ended almost immediately as I plummeted to the earth.

As I fell closer and closer to the ground I remembered my dream of once again being a plant. I hoped to land somewhere with soft, fertile soil that would allow me to flourish.

Unfortunately, instead I landed on a barren rock with none of the requirements for me to grow. Here I sit, waiting for wind or water to come carry me away to somewhere my dream can be realized.

RUBRIC FOR SEED DISPERSAL DICE SIMULATION NARRATIVE

| | 1 point | 3 points | 5 points |
|---|--|--|--|
| Grammar, Mechanics, & Spelling | Many mistakes that make it difficult for the reader to understand. | A few mistakes, but the reader can still understand. | Only 1-2 mistakes and the reader can understand. |
| Organization and Coherence | The story is not in a sense of logical order of events. | The story follows order of events, but lacks coherence. | The story follows a logical order and is coherent. |
| Events from recording sheet | Includes 3 or less events from the simulation | Includes 4-5 events from the simulation. | Includes 6 or more events from the simulation. |
| Details and Scientific Vocabulary | No details are added. Academic vocabulary is not present | A few obvious details are added along with some academic vocabulary. | Many imaginative details are added. Clear use and knowledge of academic vocabulary is present. |

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