

ENERGY IN AN ECOSYSTEM

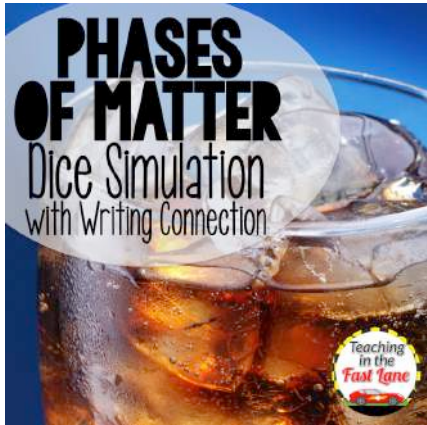
Dice Simulation
with Writing Connection



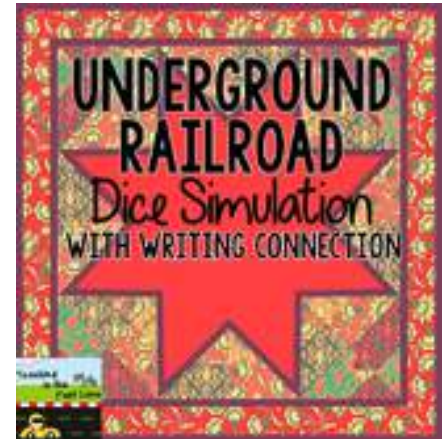
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Teaching in the Fast Lane

FOR MORE SIMULATIONS!



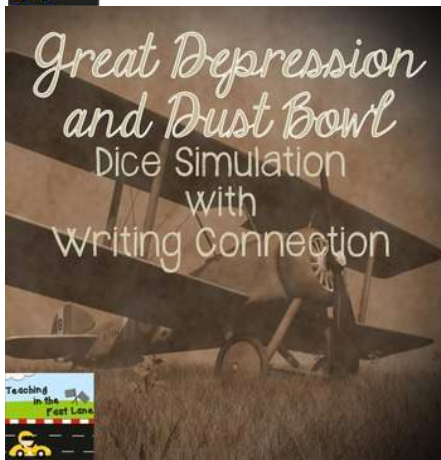
TURKEY IN HIDING
Dice Simulation
AND WRITING CONNECTION



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 ways that energy can travel through an ecosystem. This simulation is a great way to connect science and writing within your curriculum.

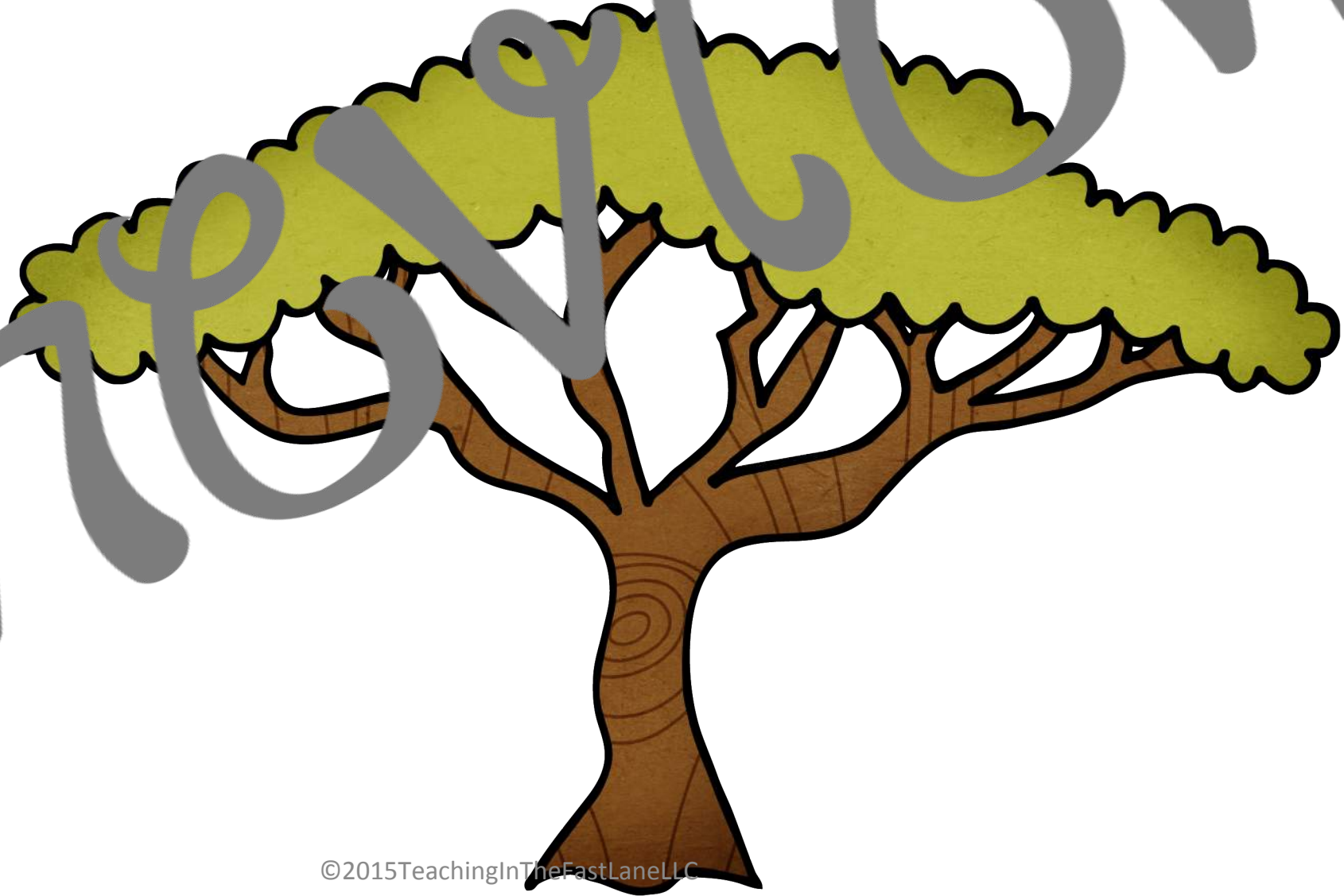
TEACHER DIRECTIONS FOR SIMULATION

- 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.
- Begin by discussing how energy starts with the sun.
 - Assign students to their starting location.
 - I do this by numbering students off #1-6 and assign them to the following locations:
 - 1. Trees
 - 2. Plants
 - 3. An Insect
 - 4. A Frog
 - 5. A Snake
 - 6. An Eagle

DIRECTIONS FOR SIMULATION

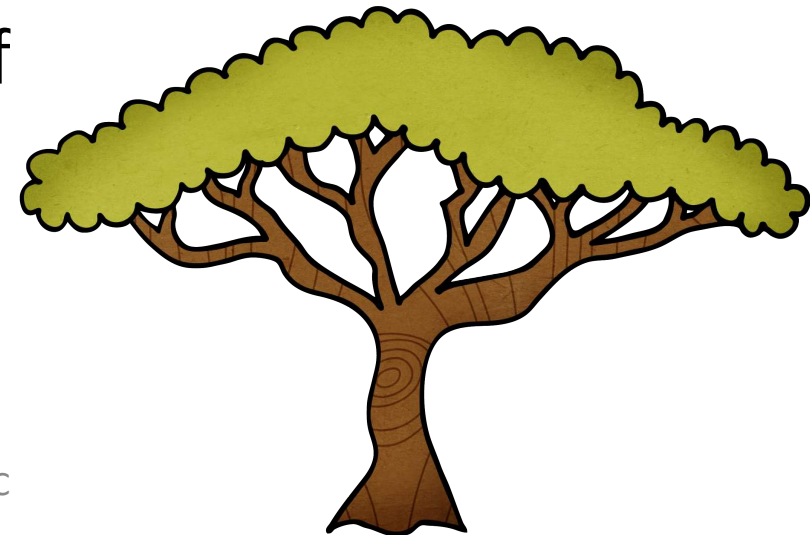
- After each student has their starting location, they should begin to circulate.
- At each location, roll the die and read the event associated with the number rolled. Use the underlined words to record your progress and travel to the next location.
- Once you have established your location, travel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



A TREE

1. An insect comes along and nibbles on your leaves.
2. A mouse makes a snack out of your bark.
3. You begin to decompose, and a fungus grows out of you.
4. An insect comes along and nibbles on your leaves.
5. A lizard makes quick work of eating your leaves.
6. A mouse makes a snack out of your bark.



PLANTS

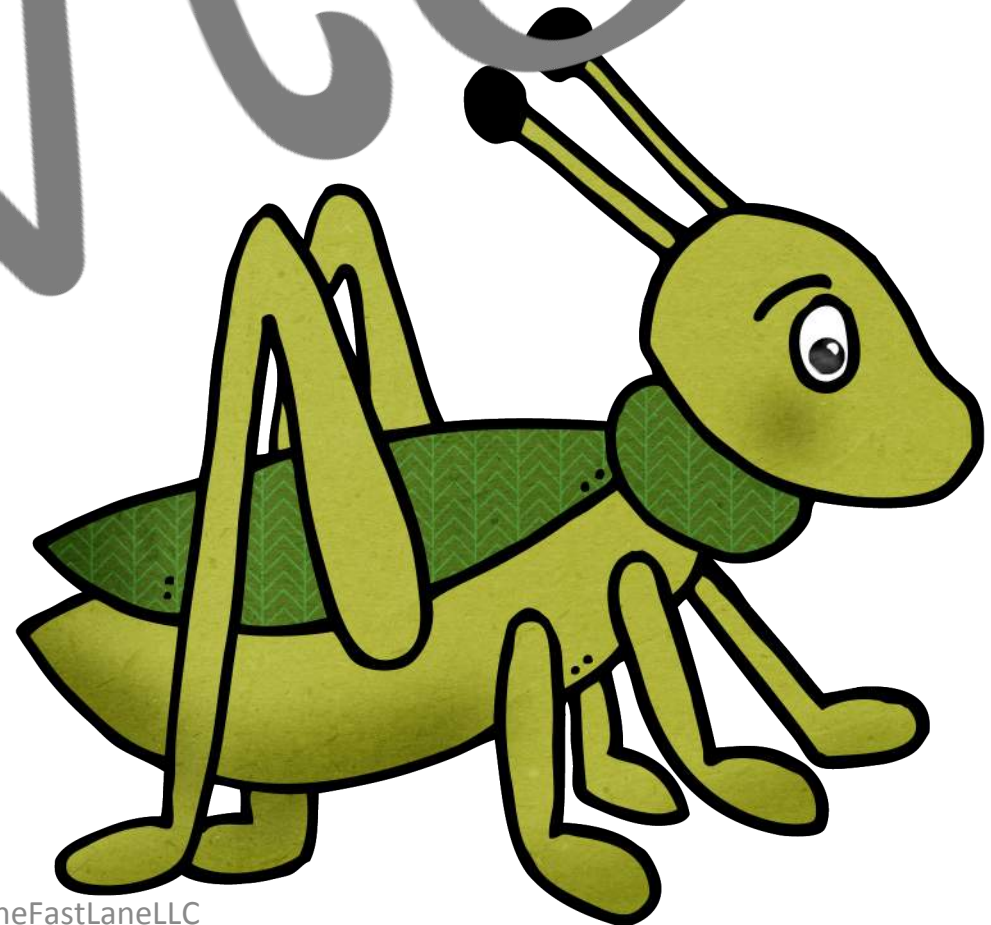


PLANTS

1. A mouse enjoys your rich leaves.
2. A lizard finds you to be their favorite snack.
3. A fungus feeds on your decaying leaves.
4. An insect nibbles on your leaves.
5. A fungus feeds on your decaying leaves.
6. An insect nibbles on your leaves.

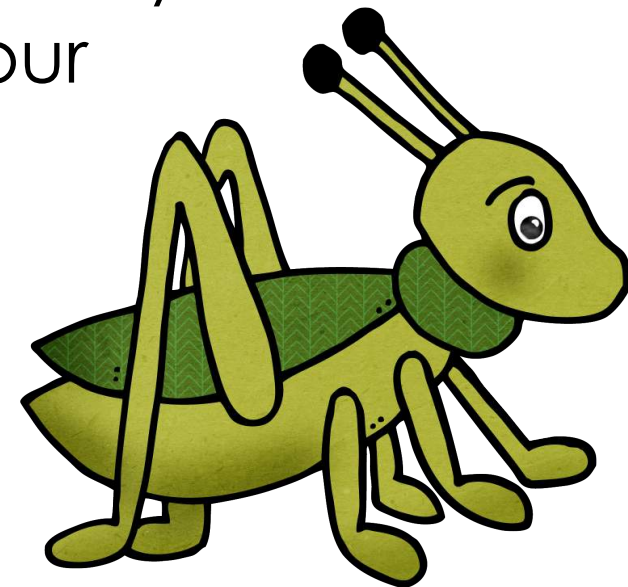


AN INSECT

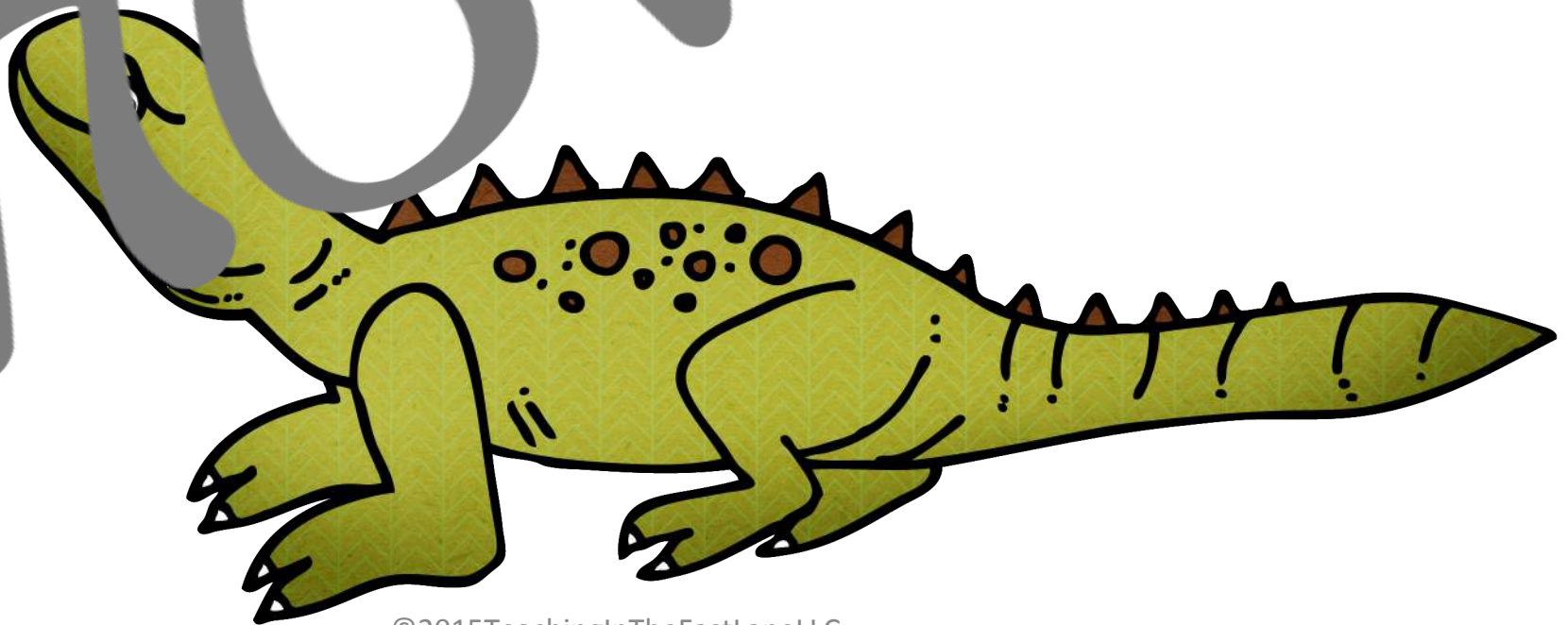


AN INSECT

1. You are eaten by a lizard.
2. A snake makes a quick snack out of you.
3. After dying, a fungus feeds on your decaying matter.
4. You are eaten by a lizard.
5. A snake makes a quick snack out of you.
6. After dying, a fungus feeds on your decaying matter.

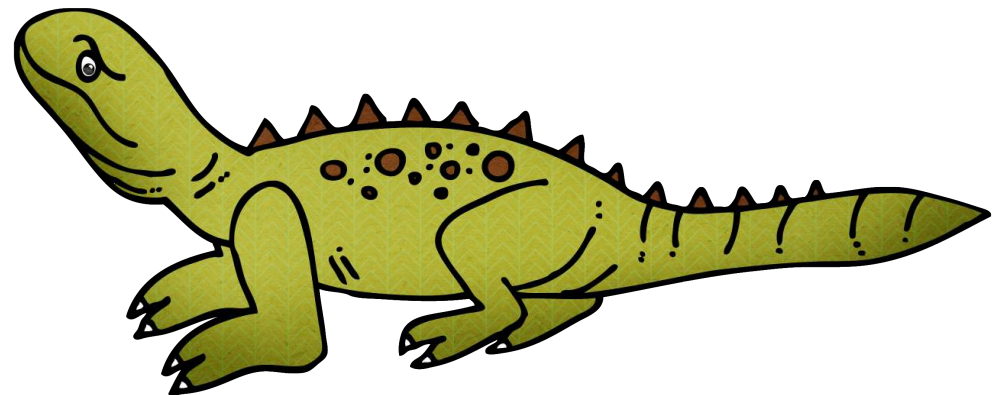


A LIZARD



A LIZARD

1. An eagle swoops down and catches you.
2. You are eaten by a snake.
3. A larger lizard comes along and eats you.
4. After dying, a fungus feeds on your decomposing matter.
5. You are eaten by a snake.
6. An eagle swoops down and catches you.

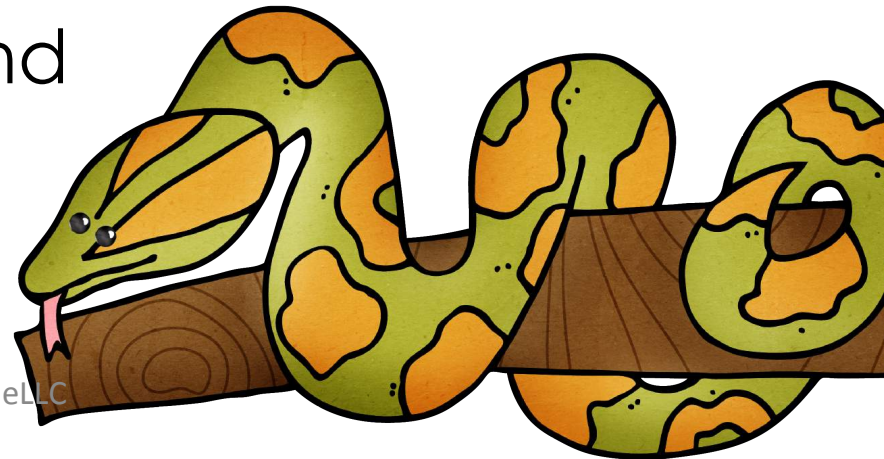


A SNAKE



A SNAKE

1. A larger snake comes along and swallows you up.
2. An eagle swoops down and catches you.
3. A lizard swallows you whole.
4. After dying, a fungus feeds on your decaying matter.
5. A larger snake comes along and swallows you up.
6. An eagle swoops down and catches you.



A MOUSE

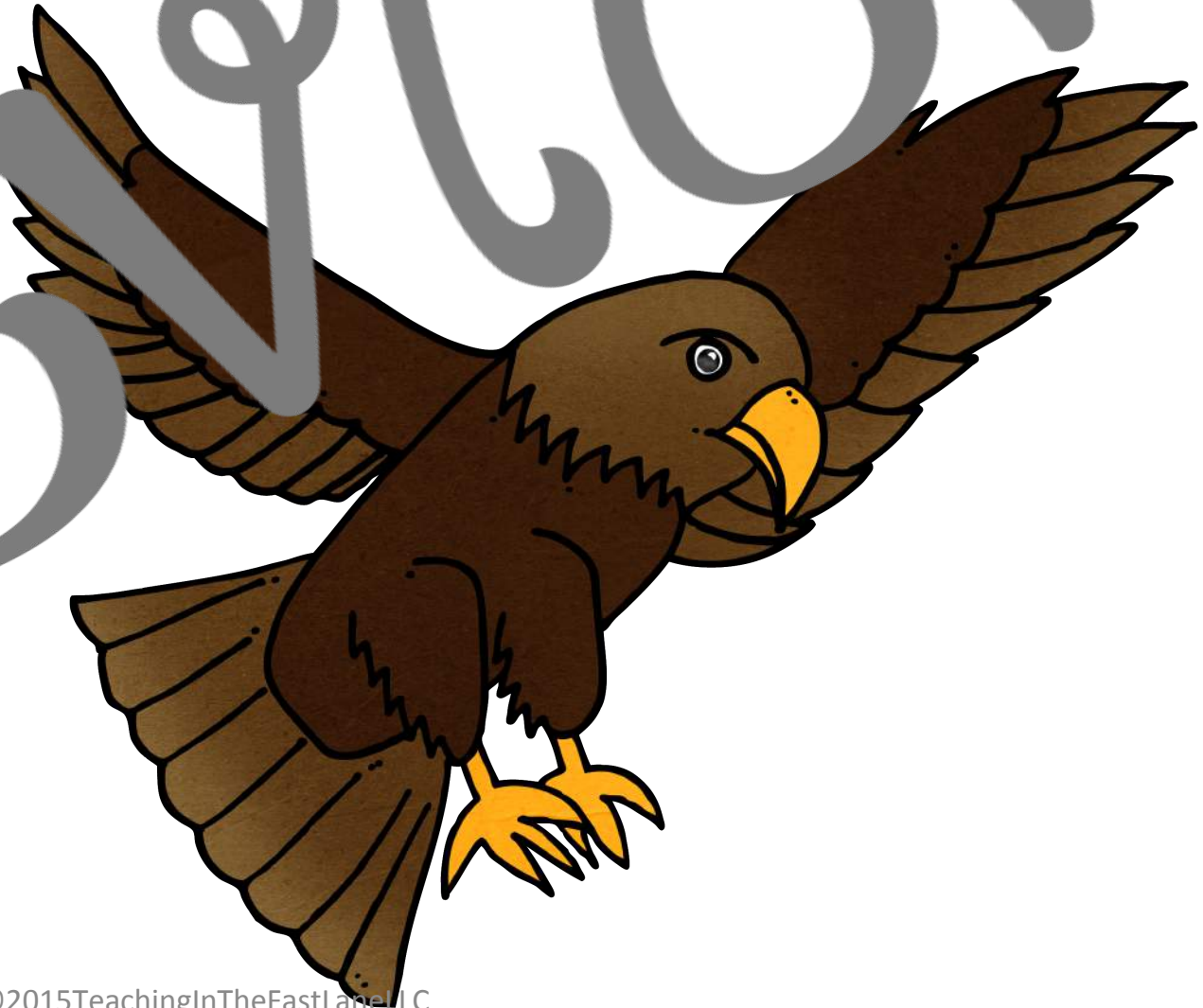


A MOUSE

1. A snake comes out of nowhere and swallows you whole.
2. An eagle swoops down and grabs you.
3. A lizard strikes and eats you.
4. After dying, a fungus feeds on your decaying matter.
5. A snake comes out of nowhere and swallows you whole.
6. An eagle swoops down and grabs you.

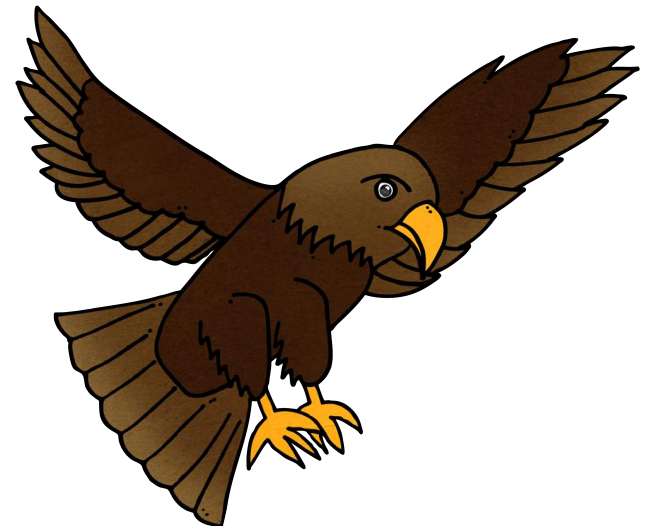


AN EAGLE



AN EAGLE

1. After dying, a fungus feeds on your decaying matter.
2. While in your nest, a large snake grabs you.
3. After dying, a fungus feeds on your decaying matter.
4. While in your nest, a large snake grabs you.
5. After dying, a fungus feeds on your decaying matter.
6. While in your nest, a large snake grabs you.



A FUNGUS



A FUNGUS

1. A mouse comes along and nibbles on you.
2. Your decaying matter provides energy for another fungus.
3. An insect eats you up.
4. A plant uses the nutrients that you have broken down for photosynthesis.
5. A tree uses the nutrients that you have broken down to grow stronger.
6. A plant uses the nutrients that you have broken down for photosynthesis.



Name_____

#_____

Date_____

ENERGY IN AN ECOSYSTEM DICE SIMULATION

1	Begin	1 1	
2		1 2	
3		1 3	
4		1 4	
5		1 5	
6		1 6	
7		1 7	
8		1 8	
		1 9	
10		2 0	

SAMPLE RECORDING SHEET

ENERGY IN AN ECOSYSTEM DICE SIMULATION

1	Begin a tree	11	eaten by a snake
2	eaten by an insect	12	caught by an eagle
3	eaten by a lizard	13	decomposed by a fungus
4	eaten by an eagle	14	nourish a tree
5	decomposed by a fungus	15	eaten by a mouse
6	nourish a plant	16	eaten by a lizard
7	eaten by a mouse	17	eaten by a snake
8	eaten by a snake	18	caught by an eagle
9	eaten by a bigger snake	19	eaten by a snake
10	caught by an eagle	20	caught by an eagle

TEACHER DIRECTIONS FOR NARRATIVE

- After completing the dice simulation, students are ready to write a narrative from the point of view of energy traveling through an mc system.
- Students should use their recording sheet (the locations they visited) to write a narrative piece about their adventure.
- By following their 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

Energy. The source of all life in the universe. I left the sun with the charge of knowing that I would be responsible for providing life to every organism that I came in contact with.

It didn't take long for me to meet my first organism, a tree. Through the miracle of photosynthesis I was able to provide the ability to grow. I stretched my legs as I coursed through the bright green leaf.

Soon enough I felt myself being torn away by an insect that was nibbling on my leaf. I felt myself being absorbed into the insect's body, but before I knew it we were swallowed whole by a lizard.

That didn't last long though, because before I knew it we were scooped up by a majestic eagle and carried back to their nest. In the nest, I was fed upon by the mother eagle and her four babies. It was a strange sensation being chewed up and then spit back out into the mouths of the babies.

Unfortunately the baby that I nourished didn't make it, and fell out of the nest. Luckily though my energy was quickly absorbed by fungus that decomposed the eagle and sent me into the soil as nutrients.

After the next rain I had the distinct pleasure of making my way through the roots of a mighty tree and into its leaves where I underwent the process of photosynthesis again.

Here I stretch my legs in this gigantic leaf and wait for the next organism that will be passed to.

RUBRIC FOR ENERGY IN AN ECOSYSTEM 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 does not make sense or follow 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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