

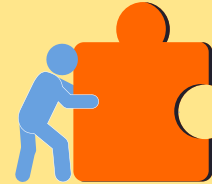
# THIRD GRADE ACTIVITY 1 THE POWER OF SPHERES

IKOS in the classroom promote offscreen learning and hands on fun for all grade levels!

## SCIENCE

### LEARNING OBJECTIVES:

Standard 3 Objective 1 – Show that objects at rest will not move unless a force is applied to them.



### SUPPLIES:

Resources to be gathered before students arrive:  
- IKOS spheres (number depending on how many participants).  
- Cubes



### OVERVIEW:

1. Students will build IKOS Spheres.
2. They will compare the movement of cubes and spheres without force being applied to them.
3. Students will place the objects on a flat tile/laminate floor. Compare what each object does.
4. Students will place them on carpet. Compare what each object does.
5. Students will place them on a slanted surface. Compare what each object does.
6. Students will find other surfaces to place the objects on and compare how each object behaved.



### EXPLORE:

Ask: Do objects move when a force is not applied to them?  
How do objects move?



# THIRD GRADE ACTIVITY 2 THE POWER OF SPHERES

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## SCIENCE

### LEARNING OBJECTIVES:

Standard 3 Objective 2 – Predict and observe what happens when a force is applied to an object (eg wind, flowing water...)



### SUPPLIES:

Resources to be gathered before students arrive:  
- IKOS spheres (number depending on how many participants.



### OVERVIEW:

1. Students will build IKOS Spheres.
2. Students will apply different forces to the sphere and document the direction the sphere moves to and how far.



### EXPLORE:

Ask: What happens when you apply a force to the sphere?



# THIRD GRADE ACTIVITY 3 THE POWER OF SPHERES

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## SCIENCE

### LEARNING OBJECTIVES:

Standard 3 Objective 2 – Conduct a simple investigation to show what happens when objects of various weights collide with one another (e.g., marbles, balls).



### SUPPLIES:

Resources to be gathered before students arrive:  
- IKOS spheres (number depending on how many participants).



### OVERVIEW:

1. Students will build an IKOS sphere and put a variety of objects inside them (one sphere has cotton balls, one has marbles, one has modeling clay...etc.)
2. Students will crash the IKOS spheres together and document what happens to them.



### EXPLORE:

Ask: What happens when you crash IKOS spheres of different weights together?



# THIRD GRADE ACTIVITY 4 THE POWER OF SPHERES

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## MATH

### LEARNING OBJECTIVES:

Standard 3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.



### SUPPLIES:

Resources to be gathered before students arrive:  
- IKOS spheres (number depending on how many participants.)  
- Molding clay



### OVERVIEW:

1. Students will create  $\frac{1}{2}$  an IKOS sphere.
2. Students will fill each  $\frac{1}{2}$  of the IKOS sphere with molding clay.
3. They will identify each part of the IKOS sphere as  $\frac{1}{2}$ .
4. Students will repeat step 2.
5. Students will remove the clay and divide each  $\frac{1}{2}$  into equal halves and identify each part as  $\frac{1}{4}$ .
6. Explain to another group what you did.



### EXPLORE:

Ask: Can you divide a sphere into equal parts?



# THIRD GRADE ACTIVITY 5 THE POWER OF SPHERES

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## MATH

### LEARNING OBJECTIVES:

Standard 3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), milliliters (ml), and liters (l)...



### SUPPLIES:

Resources to be gathered before students arrive:  
- IKOS spheres (number depending on how many participants.)  
- Open cube that is the same height and width of the sphere



### OVERVIEW:

1. Students will estimate how much water an IKOS sphere can hold using appropriate mathematical formulas.
2. Students will put the IKOS sphere in a gallon size bag and squeeze it tightly around the sphere.
3. Students will add water to the sphere until it is full.
4. Students will remove the sphere from the bag and pour the water into a container to measure the amount of the water that filled the sphere.
5. Students will record how much water the sphere can hold.
6. Students will fill a cube that has the same height and width of the sphere with water.
7. Students will record how much water the cube can hold and compare it with the amount the sphere could hold.



### EXPLORE:

Ask: How much water can an IKOS sphere hold.  
What holds more water, the sphere or the cube.

