

# KINDERGARTEN

# ACTIVITY 1

## THE POWER OF SPHERES

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

### GEOMETRIC INVESTIGATION

#### LEARNING OBJECTIVES:

Standard K.G.5 Model and create shapes from components.



#### SUPPLIES:

Resources to be gathered before students arrive:

- IKOS pieces (number depending on how many participants)



#### OVERVIEW:

Teacher will show the IKOS sphere and tell the students that the IKOS pieces make a sphere. Place the IKOS in boxes and allow the students to investigate the pieces and figure out how to put them together in small groups or pairs.

After all the students have had a few opportunity to investigate the IKOS pieces the teacher will show the students how the pieces fit together like a puzzle (as a whole group).

Students will investigate with the IKOS pieces again in small groups or pairs.



#### EXPLORE:

Ask: Can you (the students) make a sphere out of these pieces?

1. Students will investigate the IKOS pieces.
2. Students will try to make a sphere out of the IKOS pieces.



#### ASSESS:

Teacher will observe the students investigations.

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# ACTIVITY 2

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### COUNTING

#### LEARNING OBJECTIVES:

Standard K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality.

1 2 3 4

#### SUPPLIES:

Resources to be gathered before students arrive:

- IKOS pieces (number depending on how many participants)
- Small piece of paper per box of IKOS pieces



#### OVERVIEW:

As a whole group, the teacher will show the class an IKOS sphere and ask the students how many pieces they think are needed to make a sphere. The students will estimate the number of pieces they think are needed. The teacher will show the class a box of IKOS pieces (a complete set to make a sphere) and tell the students that they need to count the number of pieces that are in the box, write that number on the paper and then take those pieces and make a sphere. Then the students will construct a sphere in pairs or small groups.



#### EXPLORE:

Ask: How many pieces do you think are needed to make a sphere?

1. Students will estimate how many they think are needed.
2. Then they will start counting in pairs or small groups.
3. Construct an IKOS sphere.



#### ASSESS:

Teacher will check the number on the paper.  
Teacher will see if the students could put the sphere together on their own.

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# ACTIVITY 3

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### MEASUREMENT AND DATA

#### LEARNING OBJECTIVES:

Standard K.MD.1 Describe measurable attributes of objects, such as length.



#### SUPPLIES:

Resources to be gathered before students arrive:

- IKOS pieces (number depending on how many participants)
- Paper to record measurements of IKOS pieces and sphere circumference.



#### OVERVIEW:

Teacher will explain and demonstrate to the class what measurement is. How you can measure with a ruler, with a string, with paper clips. As a whole class they will measure many different objects with a string and then compare the lengths of the strings for the different objects. Then the students will give each pair of students a IKOS sphere and ask them to measure it's circumference both vertically and horizontally.

Students (in pairs) will measure the sphere with a string.



#### EXPLORE:

Ask: What is the circumference of the IKOS sphere?

1. Students will measure the IKOS sphere using a string and compare the two measurements.



#### ASSESS:

Teacher will observe the students' measurements.

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# ACTIVITY 4

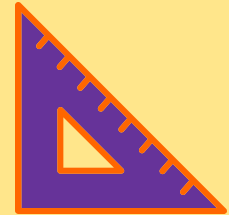
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### GEOMETRY

#### LEARNING OBJECTIVES:

Standard K.G.3 Identify shapes as two-dimensional or three-dimensional.



#### SUPPLIES:

Resources to be gathered before students arrive:

- IKOS pieces (number depending on how many participants)
- Other two-dimensional pieces
- Other three-dimensional pieces.



#### OVERVIEW:

Small Group Activity:

Teacher will prepare a number of IKOS spheres in a collections of IKOS pieces that don't make a sphere. Teacher can add other two-dimensional shapes and three-dimensional shapes to create more sorting opportunities and shape recognition.

Students will be instructed to sort the two-dimensional pieces from the 3-dimensional pieces.



#### EXPLORE:

Ask: Which objects are two-dimensional and which ones are three-dimensional?

1. Students will sort two-dimensional and three-dimensional shapes.



#### ASSESS:

Teacher will assess the final sorting groups.

# KINDERGARDEN

# ACTIVITY 5

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### BOWLING

#### LEARNING OBJECTIVES:

Science: Standard 3: Objective 1 – Identify how non-living things move.



#### SUPPLIES:

Resources to be gathered before students arrive:

- IKOS pieces (number depending on how many participants)
- Bowling pins or something for the students to knock down.
- Score keeping sheet.



#### OVERVIEW:

Small Group Activity

Students will form teams. Each team will take turns knocking down the bowling pins.

- 1st – roll the sphere slowly with one hand.
- 2nd – roll the sphere quickly with one hand.
- 3rd – roll the sphere by pushing it with two hands.
- 4th – roll the sphere by kicking it with foot.
- 5th – roll the sphere by blowing it.

With each type of roll count how many pins were knocked down.

Keep track of the number of pins knocked down each time and then add them up at the end.



#### EXPLORE:

Ask: Which type of rolling knocked down the most pins?  
Which type of rolling knocked down the least? How many pins were knocked down by each team? Which team had the most pins knocked down?

1. Students will bowl using the sphere in small teams.



#### ASSESS:

Teacher will collect their score keeping sheet.