

CHEERIOS GRAVITY MODEL Lab

Name _____

Materials: bowl, water, about 15 cheerios (or any other cereal that floats and is roundish.)

Do this: Put water in your bowl and randomly drop your cheerios in. Give them a small stir and then observe what happens. [If the cheerios stick to the side of the bowl. Carefully release them.]

Write your observations below:

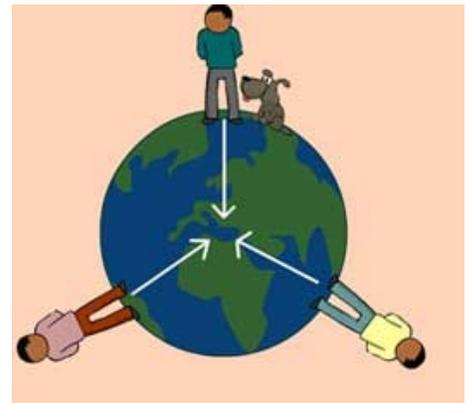
What is the general shape of your cheerios?

Now purposely separate your cheerios and give them another stir. Observe what happens and write your observations below:

READ THIS:

If you ask someone what gravity is, they usually say “a force deep in the Earth that holds us down.” That is true, but gravity is MORE than that. It is not just a force that EARTH has, it is a force found between ALL OBJECTS in the universe! You have gravity! In fact, if we were to go into space, far enough away from the Earth so that its gravity wasn’t pulling us toward it, we can do some experiments to watch gravity happen. We could hold out a couple of items, let them float, and then watch them attract each other slowly, like magnets. The reason we don’t see this on Earth is because 1] if we hold them up in the air, the Earth’s gravity is much stronger and pulls them toward it and 2] if we put them on a desk or something else to hold them up, the friction force (rubbing force) between them and the desk is much greater than the gravity between them. The strength of a gravitational pull depends on the amount of matter in the object, therefore, tiny objects have tiny gravity, and huge objects have huge gravity. The strength of a gravitational force also depends on the distance between the 2 objects. The closer they are, the greater the pulling force of gravity. It’s similar to magnetism in this way. The pull of the magnet is stronger when it is closer to the other item.

1] The white arrows in the picture represent _____.



Draw lines to match the phrase with the correct picture (2-5)

2] Gravitational force is small between objects that have small masses



3] Gravitational force is large when the mass of one or both objects is large.



4] Gravitational force is strong when the distance between two objects is small.



5] If the distance between two objects increases, the gravitational force pulling them together decreases rapidly.



6] T or F Only planets have gravitational forces.

7] What was the general shape that the cereal pulled into?

8] Tiny objects have _____ gravity, and huge objects have _____ gravity.

9] If 2 objects get closer together, the gravitational force between them _____.

10] Thought experiment: If thousands of bits of rock and dust were floating around in space near each other, what would happen over time? What shape would form if gravity pulled them together?

11] What force pulls planets together?

12] What force attracts the planets to the Sun?