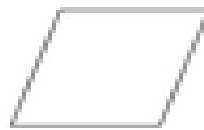# Transformations

One important math skill is being able to recognize shapes no matter how they are turned. There are three basic ways to turn a shape. These are called FLIP, SLIDE, and TURN. In these transformations, the shape and size of the shape is unchanged—only the direction or placement is new.
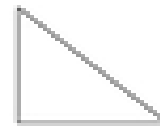
In a FLIP transformation, also known as a REFLECTION, the shape would be flipped over. This is how it might look in a mirror. A flip transformation can go in any direction (vertical, horizontal, diagonal...)

Some shapes aren't affected by flipping. A circle would not be affected by flipping, because it looks exactly the same on both sides of a mirror.

In a SLIDE transformation, also known as a TRANSLATION, you would have to recognize an item even if it moved a bit in one direction or the other. It would look exactly the same— only the placement would be new.

In a TURN transformation, also known as a ROTATION, you would be looking at a shape after it had been turned. The two hearts below show a turn transformation. The second heart is turned 90 degrees.

As with other transformations, the appearance of some shapes is not affected by turning.