

Paper Folding:

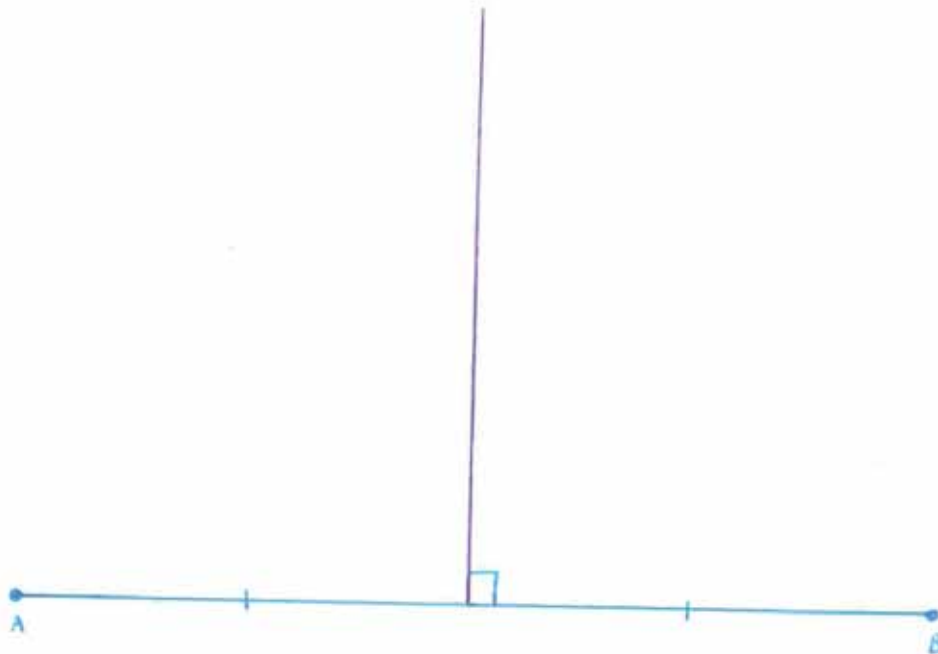
Two Basic Constructions

And Why They Work

By Crystal Davis

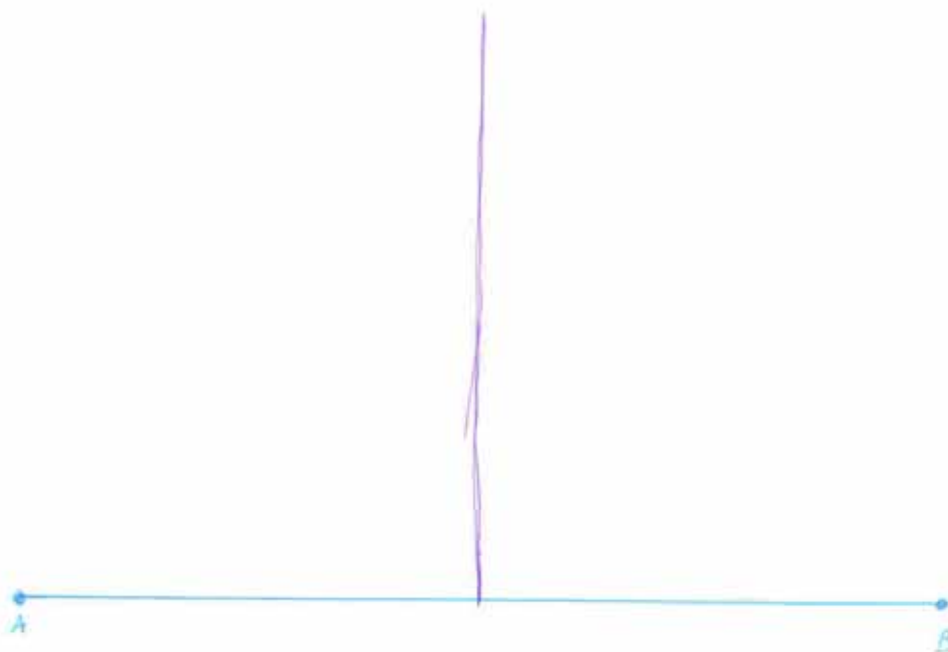
What is the **perpendicular bisector** of a line segment?

A **perpendicular bisector** cuts a line segment in half. However, a **perpendicular bisector** is special in that it forms a right angle with the line segment.



Construction of a perpendicular bisector

1. Fold the line segment onto itself so that A and B are touching.
2. Make a crease in the paper and you have created a perpendicular bisector

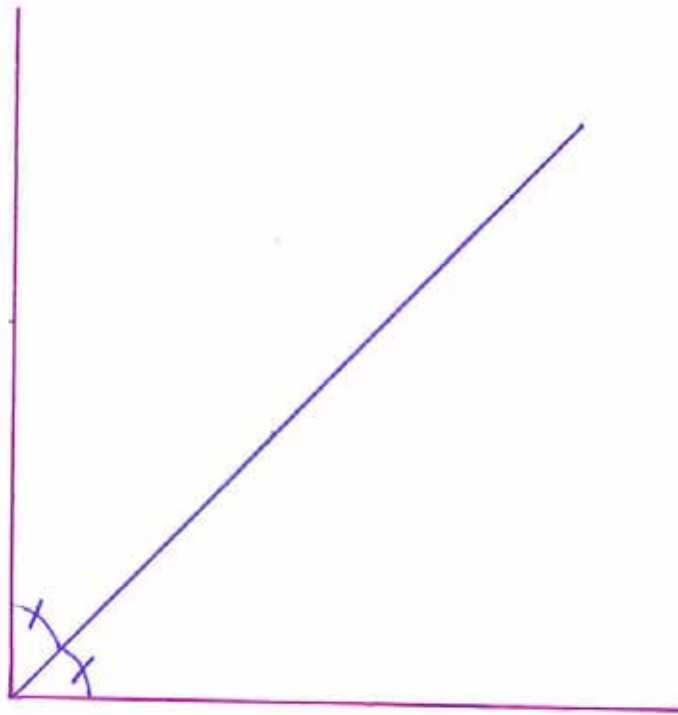


How do we know that the line constructed actually bisects the line segment?

You can see that the **perpendicular bisector** cuts the line in half because when you fold the line segment onto itself, the parts of the segment on either side of the bisector are equal. They lay exactly on top of each other and end where the other one ends.

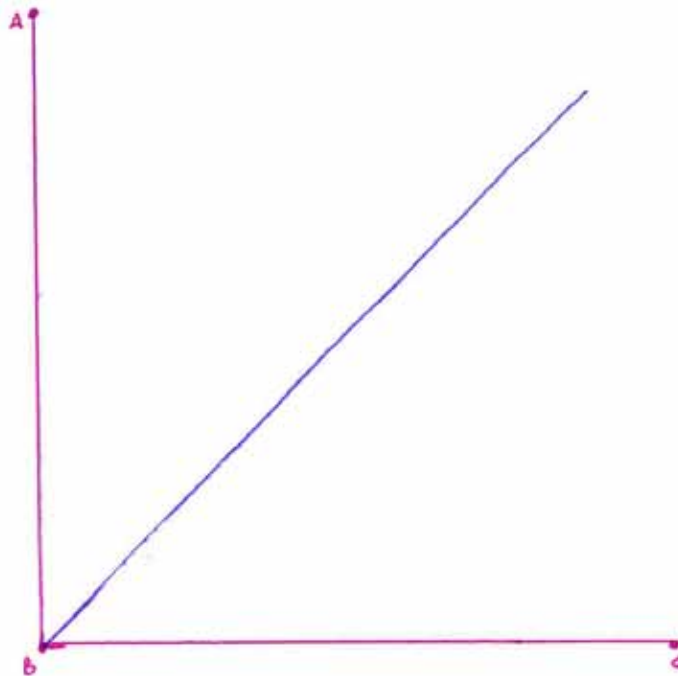
What is an angle bisector?

An angle bisector cuts an angle in half so that you end up with two equal angles.



Construction of an angle bisector

1. Fold the angle in half by overlapping the two sides so that points A and C are touching.
2. Make a crease to create an angle bisector.



How do we know that the line constructed actually bisects the angle?

We know that the line bisects the angle because when we fold the angle at the angle bisector so that the two vertices are overlapping, the sides of the angles line up perfectly. Therefore, the angles must have the same measure.