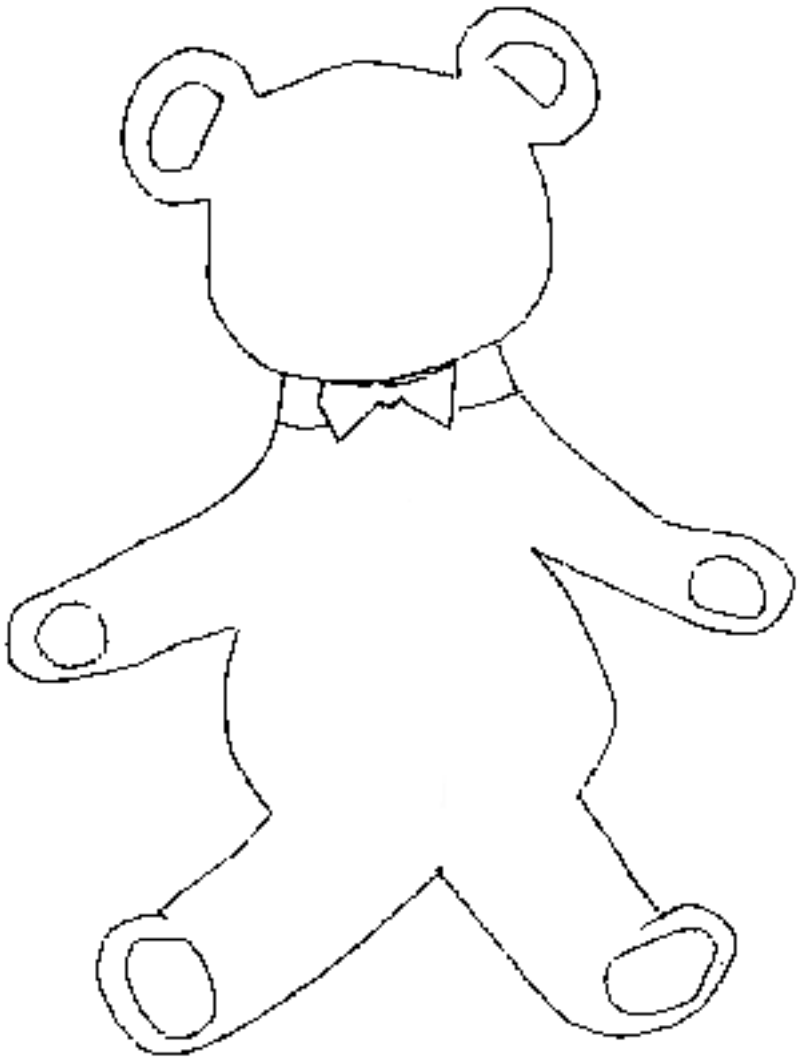
Activity 1 **An Illustrator's Dilemma**

Color the eleven regions of the bear using as few colors as possible. Remember that neighboring parts must have different colors.
How many colors did you use? _____



How do you know that you can't color the bear using fewer colors? _____

Activity 2 **Coloring the Map of the Western States**

Can you color the twenty-two states west of the Mississippi River using a small number of colors? (Remember, if any two states share a border, they must have different colors.)

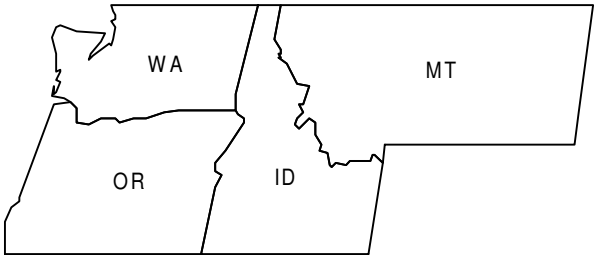
Since you will want to experiment with your colors, it might be simplest to pencil lightly in each state a letter R, W, B, P, Y, etc. (for red, white, blue, purple, yellow, etc.). Then, if you change your mind about what color to assign a state, you will be able to change it easily.

What's the smallest number of colors with which you were able to color the map? _____

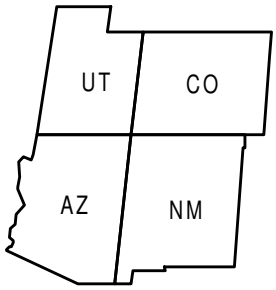
How do you know that you can't color this portion of the US map using fewer colors?

Activity 3 **Coloring Four Regions of the United States**

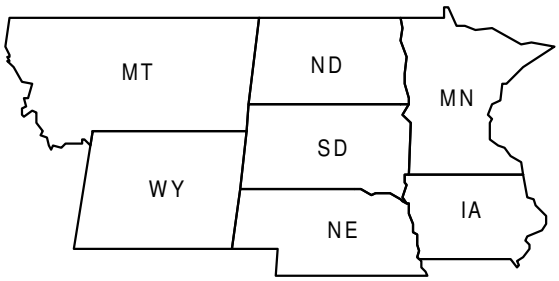
Can you color the states in each of these maps using three colors – say red, white, and blue? Remember, any two states that share a common border must have different colors so that you can tell where one state ends and the other begins. If you can't color a map using three colors, what is the fewest number of colors needed?



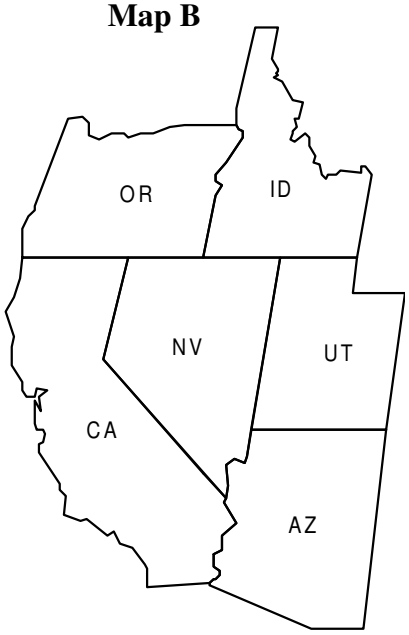
Map A



Map B



Map C



Map D

What is the smallest number of colors needed to color Map A? _____ Why can't you use one fewer color?_____

What is the smallest number of colors needed to color Map B? _____ Why can't you use one fewer color?_____

What is the smallest number of colors needed to color Map C? _____ Why can't you use one fewer color?_____

What is the smallest number of colors needed to color Map D? _____ Why can't you use one fewer color?_____