

Stairs

This worksheet is based on **Stairs**, a Desmos-based applet on **www.MathEducation.page**.
Before trying the activities spelled out here, make sure you know how to use the applet.

Exploring

1. Try making various types of stairs. Write down some notes about how you do it.
 - a. Some should go up (left to right), some down.
 - b. Some should be steep, some not.
2. What happens when you use 0 for the rise? For the run? (For this, don't start at the origin.)
3. Make some stairs connecting two points. Now use bigger or smaller steps for the same points.
4. Graph a line. Put **From** and **To** points on it.
 - a. Make stairs that sit on the line.
 - b. Make stairs that hang below the line.
5. Make some stairs. Graph the corresponding line. Make sure the **To** point is on the line.
6. Make some designs using stairs and lines.

Challenges

7. For each challenge, use these points as **From** and **To**. Connect them with a line and some stairs.
 - a. (5, 4) (-10, -5)
 - b. (-10, -3) (8,3)
 - c. (1,-5) (5,3)
 - d. (-5,-1) (9,6)
8. For each challenge, use the equation to graph a line. Put **From** and **To** points on it. Make the corresponding stairs.
 - a. $y = x / 3$
 - b. $y = 2x - 1$
 - c. $y = -3x + 2$
9. For each challenge, make the stairs, graph the line, put a **To** point on it.
 - a. **From:** (0,3) **Rise:** 2 **Run:** 3
 - b. **From:** (2,3) **Rise:** -5 **Run:** 2
10. For each challenge, make the stairs, graph the line.
 - a. **To:** (3,0) **Rise:** 3 **Run:** 2
 - b. **To:** (3,2) **Rise:** 5 **Run:** -2