

## TURTLE TIME TRIALS



Go to [student.desmos.com](https://student.desmos.com), get the class password from your teacher, and do the Desmos activity called Turtle Time Trials. Below is information on different turtles.

1. If Turtle A is running faster than Turtle B in a video, what must be true when you compare...
  - a. Their distance values in the table? **Turtle A covers more distance in any given time.**
  - b. The graphs of their lines? **Turtle A has a "steeper" line.**
  - c. The coefficient of  $x$  in their equations? (In  $y = 3x + 4$ , 3 is the coefficient of  $x$ .)

**Turtle A has a greater value for the coefficient of  $x$ .**

2. If Turtle C has a head start on Turtle D in a video, what must be true when you compare...
  - a. Their distance values in the table? **The Turtle C distance value will be greater at the start.**
  - b. The graphs of their lines? **The Turtle C graph will start higher on the vertical axis.**
  - c. The constant values in their equations? (In  $y = 3x + 4$ , 4 is the constant value.)

**The Turtle C constant will be greater.**

3. You watched a video, connected it to some equations, and observed which went faster/slower, comparing the rates of speed to the equations.

Study these equations where  $t$  represents time in seconds and  $d$  represents distance in feet.

|              |             |          |          |
|--------------|-------------|----------|----------|
| Turtle E     | Turtle F    | Turtle G | Turtle H |
| $d = 2t + 4$ | $d = t + 1$ | $d = 3t$ | $d = 2t$ |

- a. Which turtle(s) is/are the fastest? Slowest? **Fastest is Turtle G; slowest is Turtle F.**
- b. Which turtle(s) has/have the largest head start? **Turtle E.**

4. Study these graphs where  $t$  represents time in seconds and  $d$  represents distance in feet.

- a. Which turtle(s) is/are the fastest? Slowest?

**Fastest are Turtles K and L (same speed); slowest is Turtle M.**

- b. Which turtle(s) has/have the largest head start?

**Turtles K and M start at  $t = 0$ , and Turtle L starts later.**

