Patterning

Problem Solving
-Task for assessment

- Ten people are attending a party. Each person shakes hands with every one else at the party.

- Find two different ways to find the total number of handshakes

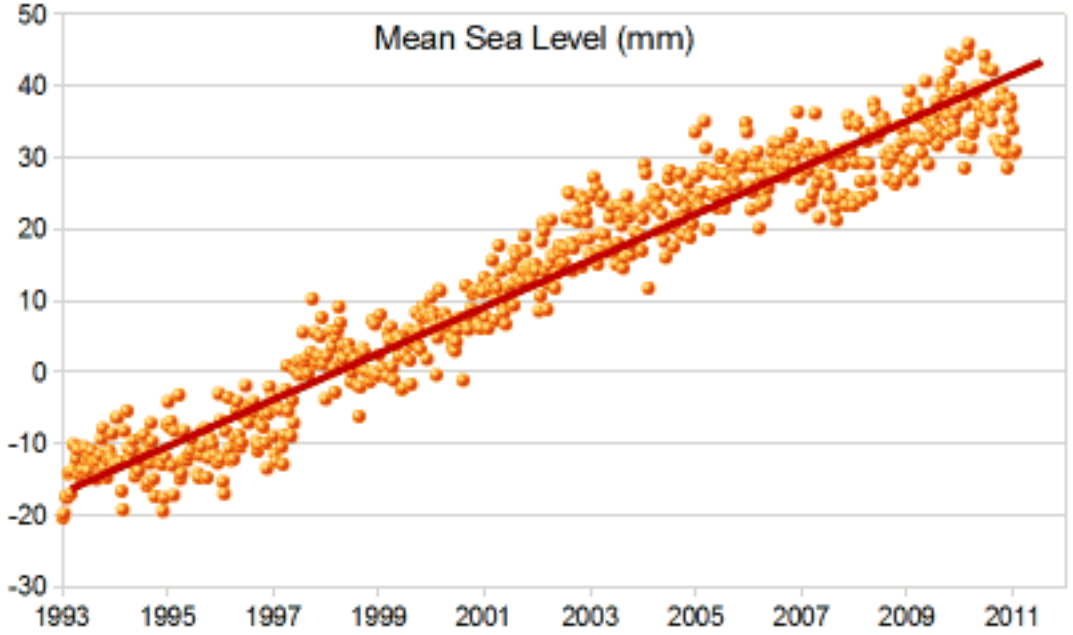
- When finished, complete the Interpreting Graphs Worksheet
  - We will take this up together

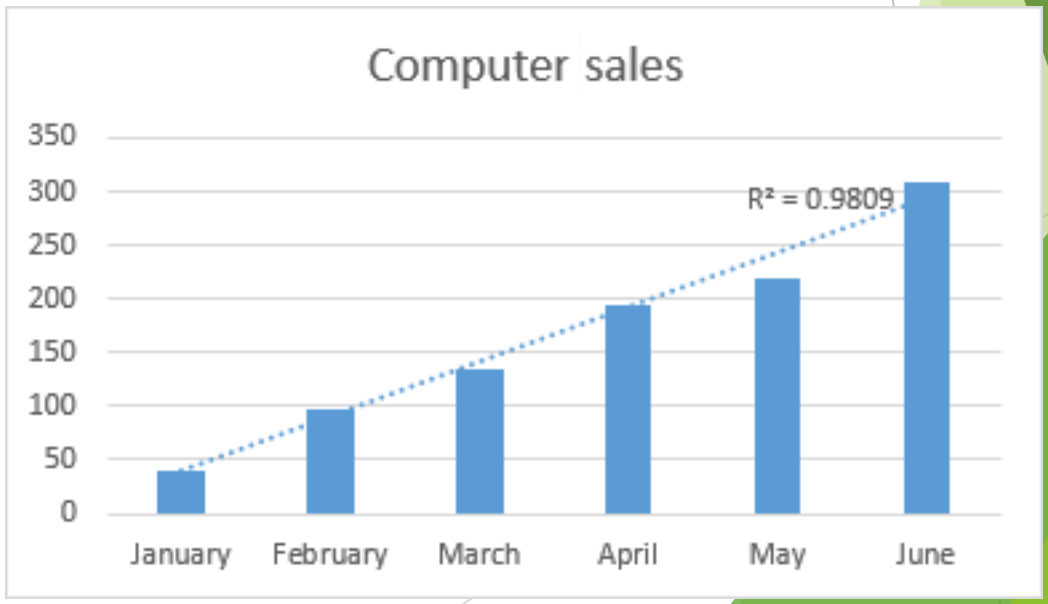
Getting Started: Trend Lines

- The line connecting the points on a graph

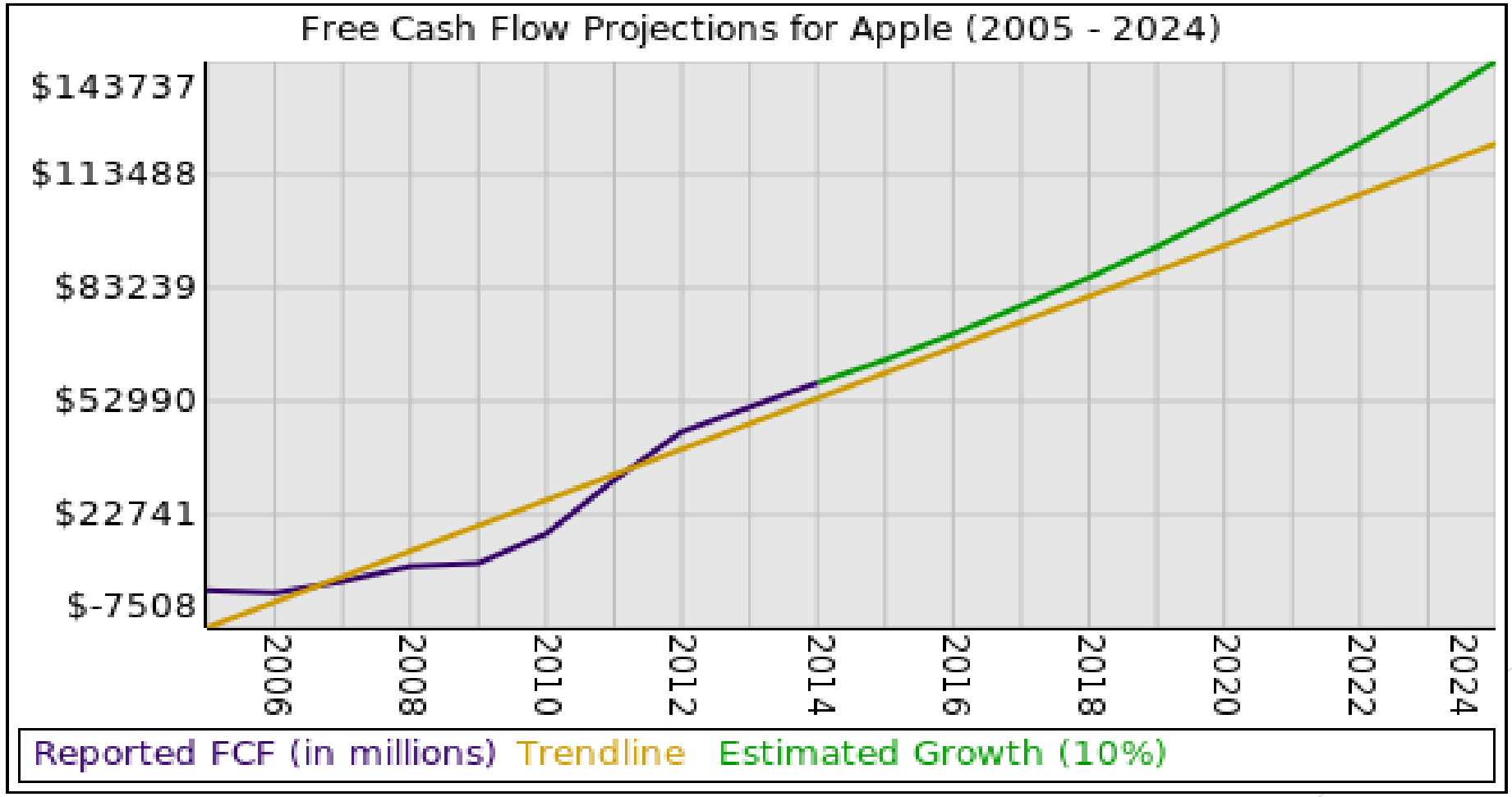
OR

- A line on a graph showing the general direction that a group of points seem to be heading
- It is also sometimes called the “line of best fit”





Apple's Projected Growth- Linear Trend Line

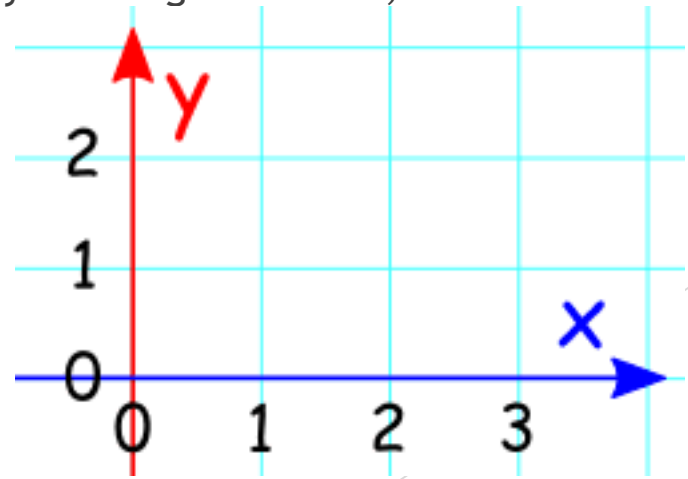


Trend Lines and Patterning

- Which would have a steeper trend line: a rule with a multiplier of 4 or a rule with a multiplier of 9? WHY?

- Which rule would have a trend line that starts higher: a rule with a constant of 3 or a rule with a constant of 7? WHY?

- If a trend line has a multiplier of 4, what rule might produce a steeper trend line? Let's graph it!
  - **REMEMBER**: On a graph, the term number are displayed along the x axis, and the number of tiles/blocks is displayed along the y axis



Working On It: Partner Work

- Each partner will build the first 4 terms of the following patterns:
  - Partner 1: # of tiles = term # x 5 + 3
  - Partner 2: # of tiles = term # x 6 + 2

- Both patterns are examples of linear growing patterns.
- Which of the two patterns trend lines will grow steeper?
- Predict what your graph will look like on the 8th term. Draw it in your book and explain your thinking to your partner.
- Do the two trend lines ever cross?

Connect and Reflect

- Share you and your partner's discoveries.
- Did the two lines ever connect?
- How did you and your partner compare your graphs?
  - Did you draw them separately or on the same paper?
  - Did you use the same scale?
  - Would any other rule have a trend line that intersects with these two lines at the same point?

Minds On:
Task for Assessment

- Carla has juvenile diabetes. She needs five injections of insulin per day. Each needle can be used only once. Carla wants to go to camp. She must take all her needles with her. She must always have at least six extra needles available.
- Copy and complete the table. Find the number of needles Carla needs to take with her for up to six days.
- Graph the data
- Write an algebraic expression for the number of needles required for 7 days, 14 days, and 30 days.

Extend the table as needed

Number of Days	Number of Needles
1	
2	
3	
4	
5	
6	