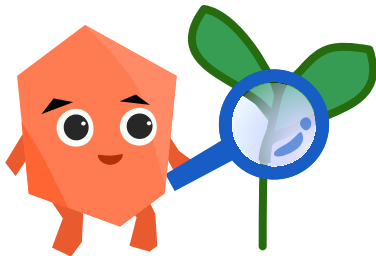Name: _____   Date: _____

Animal Linear Search

Detective Mode

Are you ready to be a detective for the day? Join Ansel on a mission to search through information using the linear search algorithm!
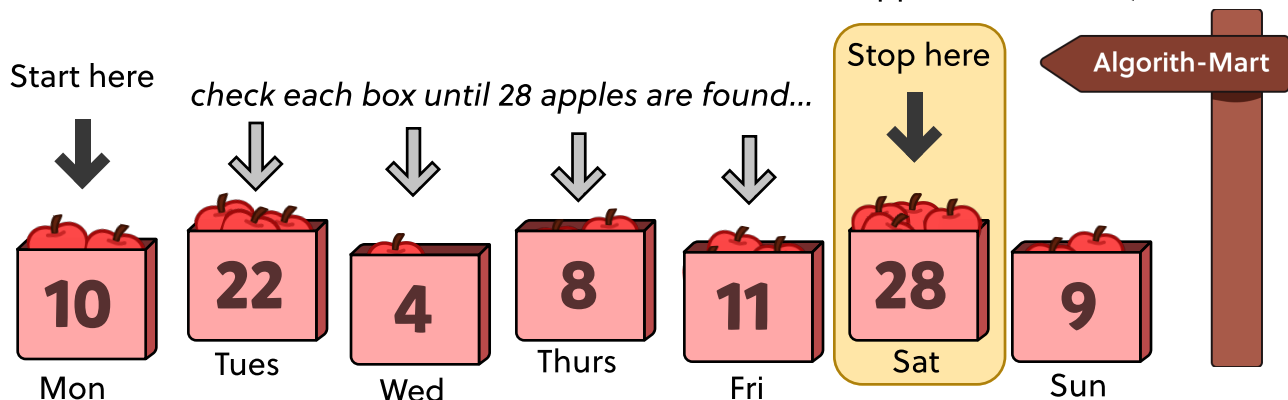
What is a Linear Search?

In computer science, linear search is the **simplest** algorithm used to search for an item in a list. The word "linear" means "straight line". To perform linear search, we check every item in a list in a straight line from **beginning to end** (left to right) until we find the item.

Take a Walk to Algorith-Mart!

Let's take a look at an example. Below is a list of apples sold at Algorith-Mart last week. Ansel wants to find the day Algorith-Mart sold **28 apples**. Using linear search, we **start from the 10 apples** sold on Monday and keep on moving right **until we find 28 apples** sold on Saturday!

We found 28 apples on Saturday!

Start here   *check each box until 28 apples are found...*   Stop here   Algorith-Mart

10	22	4	8	11	28	9
Mon	Tues	Wed	Thurs	Fri	Sat	Sun

Note: We wouldn't check Sunday because we already found what we were looking for on Saturday!

Why is Linear Search Important?

As shown in Ansel's mission at Algorith-Mart, we can use linear searches to **simply search for an item in a list**. For instance, we might want to find a specific food item in a grocery list. Or, we might want to find the highest number of soccer goals made in a match!

Animal Search

Below is a list of 10 animals. Fill in the star next to **only one** of the animals. That animal will be the one you are searching for!

Eli the Eagle ☆	Belle the Bear ☆
Dixie the Dog ☆	Sal the Snail ☆
Rex the Rabbit ☆	Ben the Beaver ☆
Leo the Lion ☆	Coco the Cat ☆
Will the Whale ☆	Paris the Pig ☆

Next, cut out the ten animal labels below and place them in a cup. With a friend, take turns drawing out a random animal from the pile (without looking) until the animal with a star is drawn.

Perform 3 trials and record how many draws you took.

	Trial #1	Trial #2	Trial #3
Draws Taken			

Reflection

Fantastic job! You just performed linear search by drawing each animal one-by-one until selecting the starred animal. Based on your experience, brainstorm 2-3 advantages and disadvantages of linear search in the table below. What went well? What could've gone better?

Advantages	Disadvantages