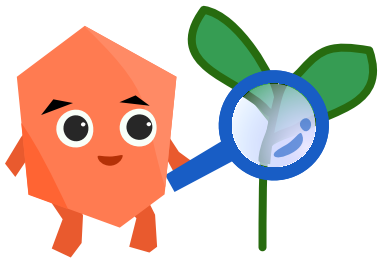
Name: _____ Date: _____

# 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!

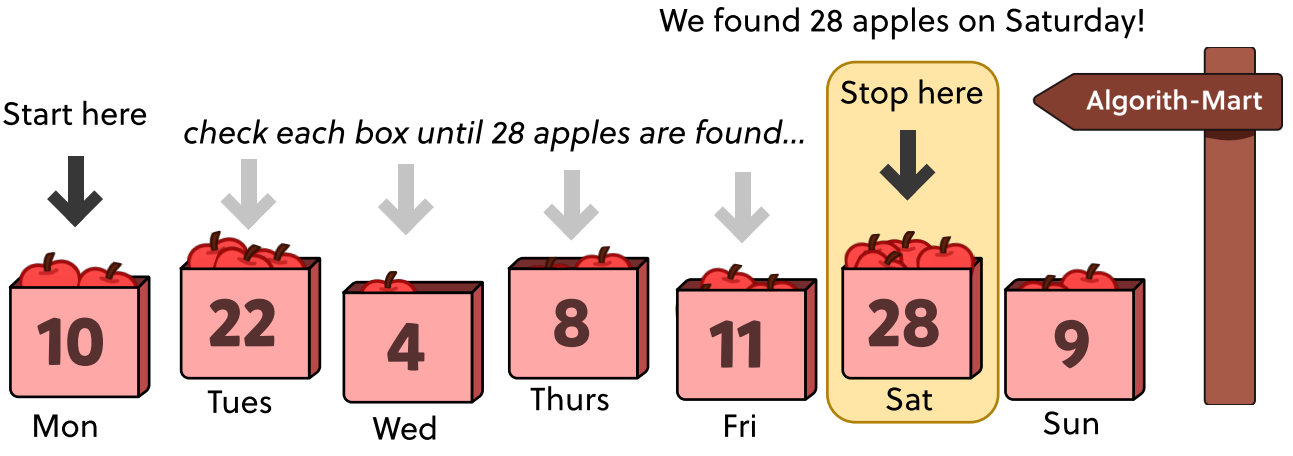


## What is a Linear Search?

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

## 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 from Monday and keep on moving right **until we find 28 apples** sold on Saturday!




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: _____ | Draws taken: _____ | 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 |
| --- | --- |
| | |