

STEM Project Resource sheet

# Guide dog partnerships



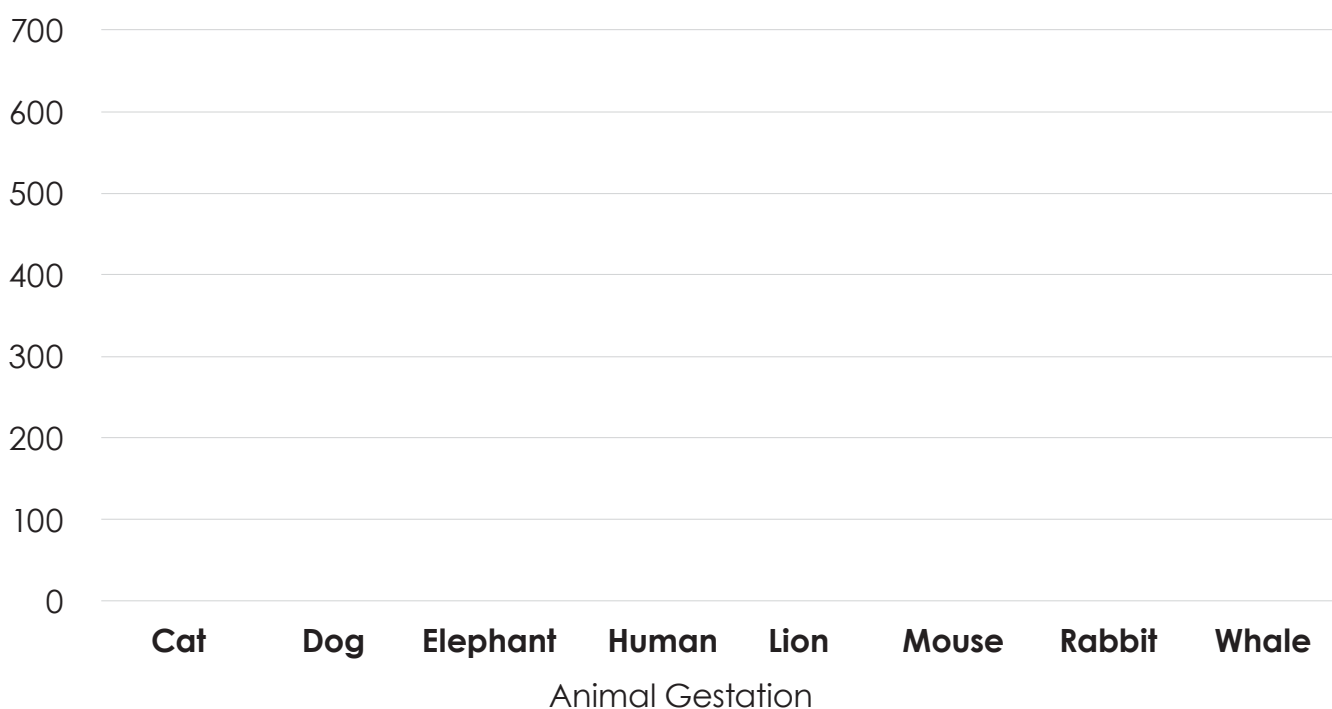
## Activity 1

### Gestation table

Research the gestation periods for each of the animals in the table.

| Species of animal | Average number of offspring per pregnancy | Gestation period in days |
|-------------------|---|--------------------------|
| Cat               | 5   |                          |
| Dog               | 6   |                          |
| Elephant          | 1   |                          |
| Human             | 1   |                          |
| Lion              | 3   |                          |
| Mouse             | 8   |                          |
| Rabbit            | 6   |                          |
| Whale             | 1   |                          |

Use the data you collected in the table to complete the bar graph to show each animals gestation period in days



## Activity 2a

### Guide dog breeds

Now we've looked at the dog as a species in relation to other mammals let's take a closer look at the breeds and which ones make good guide dogs.

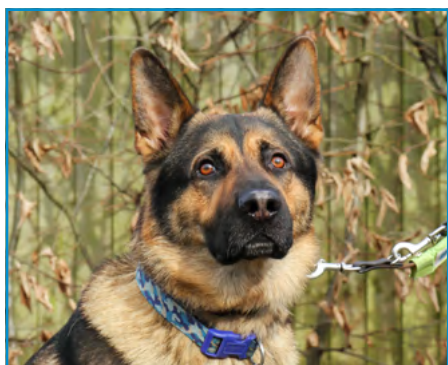
Match the parents to their offspring, put the right number below each dog and have a guess what breed we would call the offspring.



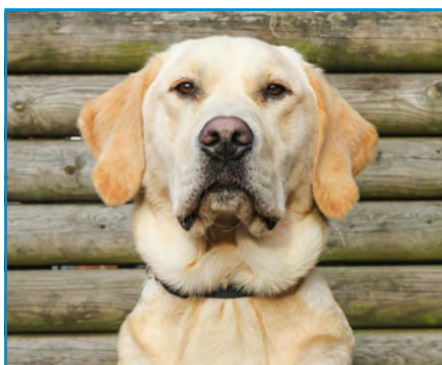
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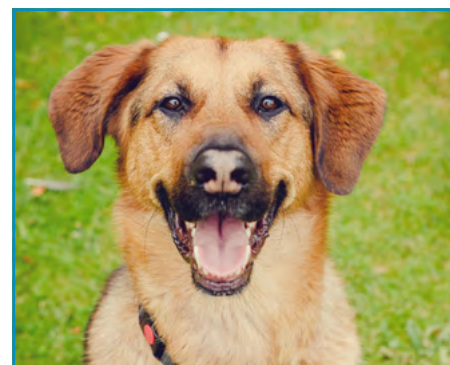
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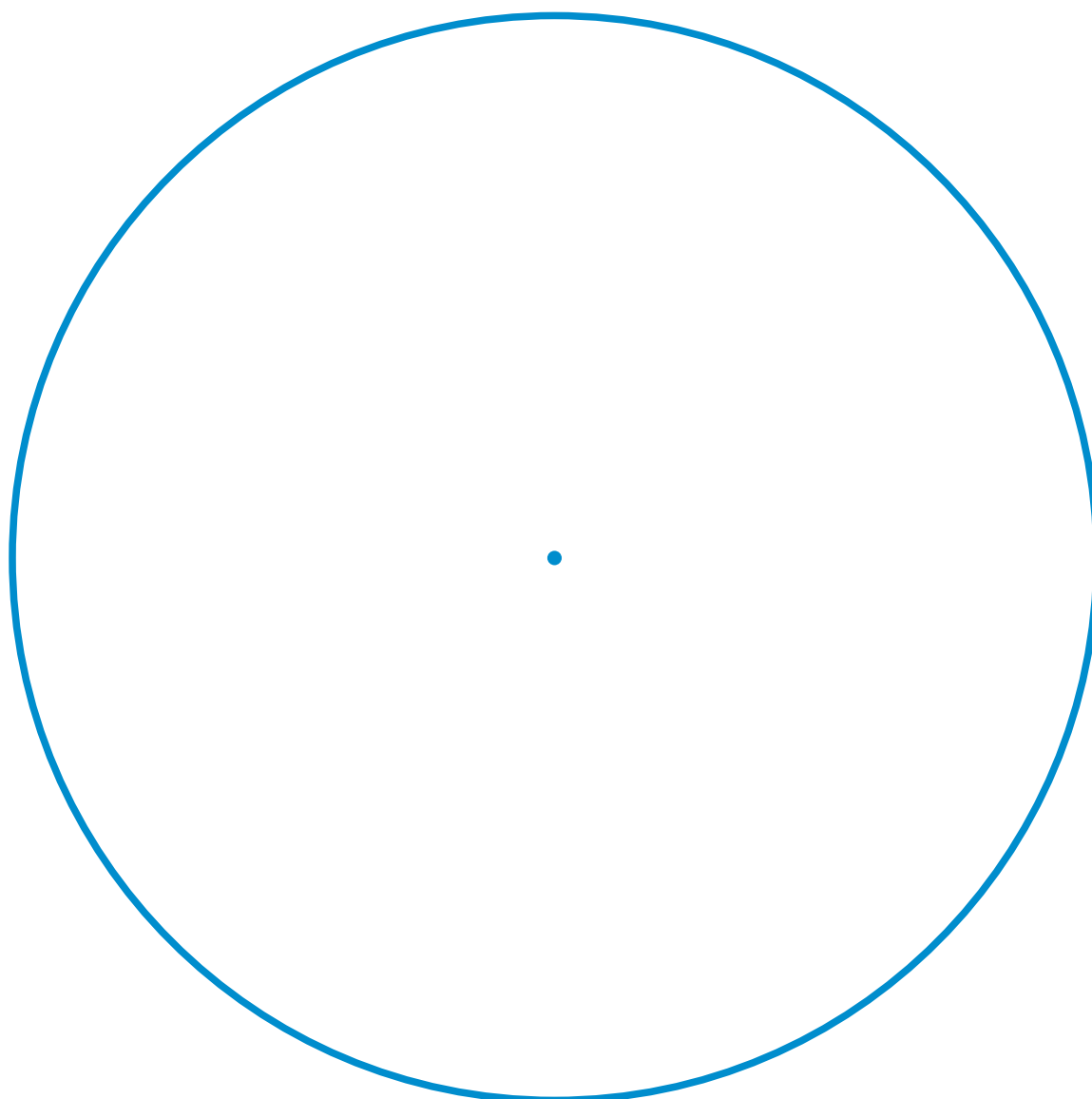
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## Activity 2b

### Bar chart of breeds

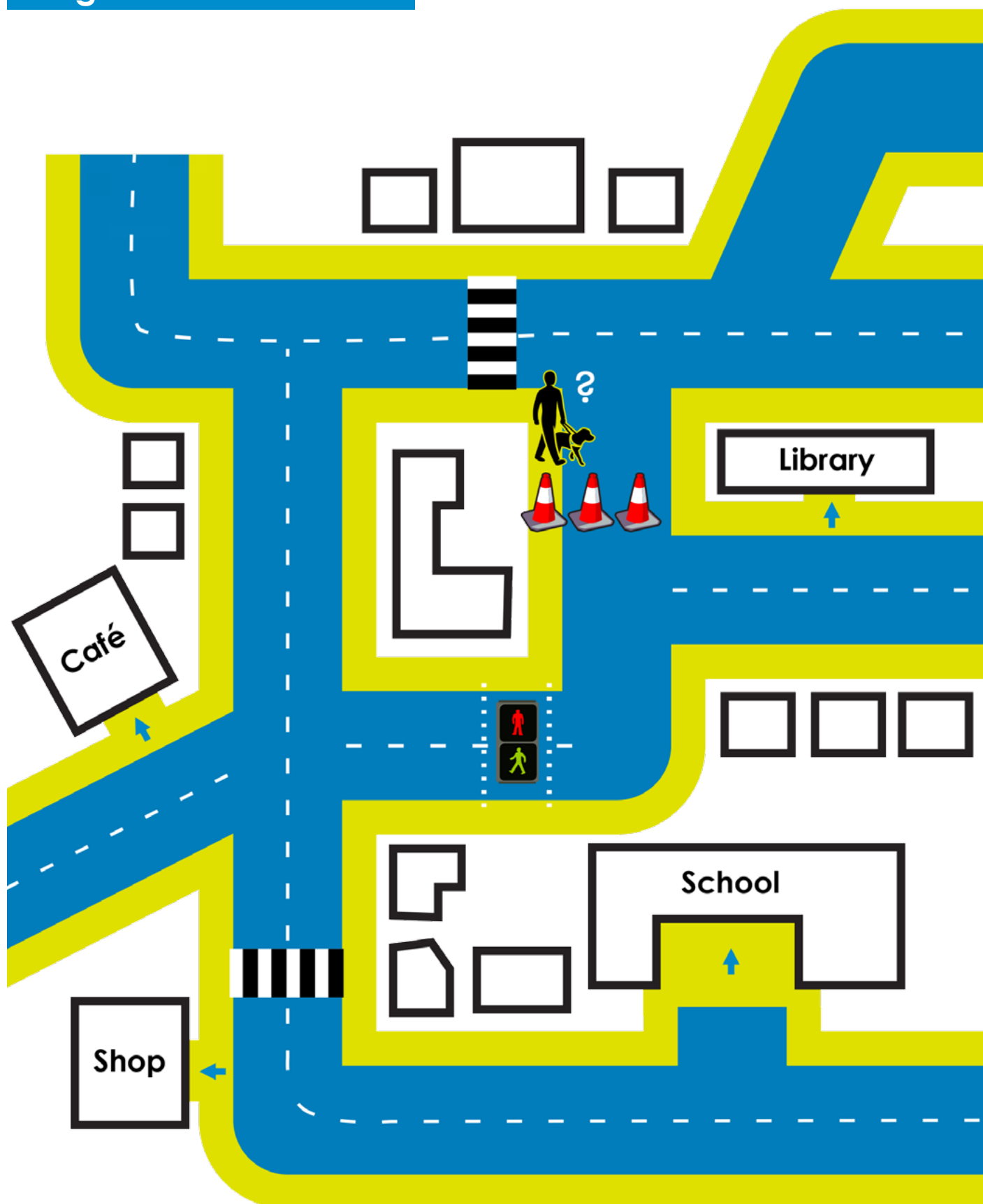
Create a pie chart to show the breeds of guide dog percentages we use.

| Breed   | Percentage of dogs |
|---|--------------------|
| Golden retrievers crossed with Labradors or German Shepherd | 50%                |
| Labrador retriever  | 34%                |
| Golden retriever  | 10%                |
| German Shepherd   | 4%                 |
| Labradors crossed with Poodles or curly coat retrievers     | 2%                 |



## Activity 4

### Using GPS wearable tech





## Stem group challenge

### Finding the right escalator

#### The brief:

People with sight loss may find it difficult to find the correct escalator or traveller, particularly when the up or down escalator are right next to each other, or if they are visiting somewhere new. This could be in the supermarket, shopping centre, airport or train station, can you come up with a solution?

#### Plan:

##### Researching the problem:

- Use the internet to find examples of escalators in various places and to understand how they work.
- Think about how you would get around if you couldn't see, research how people with sight loss get out and about, what do they use?

Now that you have researched the problem it's time to start thinking about solutions, jot down your groups ideas then agree on a plan to create one of them.

##### Questions to consider when designing your solution:

1. How can I design a solution that will also keep people safe?
2. What materials can I use for my design?
3. What would work, a low tech or a high-tech solution?
4. What other senses could people with sight loss use to find the escalator?

#### Do:

Using the resources available create your idea. Your notes should explain how your idea is going to work and why. Present your idea to the other groups.

#### Reflect:

- Review your idea against the original problem, did you succeed?
- Would you make any changes to your design or your whole approach?
- How could you improve your design?
- What have you learned?
- What did you find out about working together as a team?