Science

Animals Including Humans

Life Expectancy

twinkl

Aim

- I can record complex data using graphs and models.
- I can identify the relationship between variables.

Success Criteria

- I can create bar and line graphs to record data.
- I can suggest the best way to record complex data.

- I can compare two datasets.
- I can analyse findings.
- I can demonstrate I understand the different relationships between variables.

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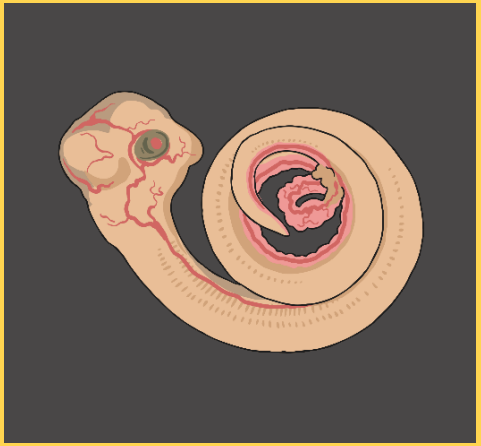
Gestation Periods



What is a gestation period?

What have your learnt about gestation periods so far?

Were you able to spot any patterns in the gestation periods of different animals?

Animal Gestation Periods Table

Animal	Gestation Period
human	9 months
lizard	3 – 4 months
salmon	40 days
snake	2 – 3 months
parrot	3 – 4 weeks

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Life Expectancy

What is life expectancy?

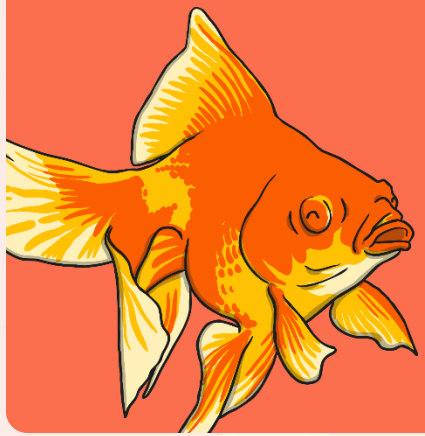
Definition: Life expectancy is the length of time, on average, that a particular animal is expected to live.

Is the following statement correct?

'Animals with longer life expectancies have longer gestation periods.'

How can we find out?

What data do we need? Why?



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Variable Datasets

Gestation Period Variable Dataset:

This has been converted to weeks for comparison. It has needed to be averaged (in between the shortest and longest gestation period for animals where different species have different gestation periods) or become more specific – e.g. house lizard rather than lizard.

Life Expectancy Variable Dataset:

Although it would be easy to record in weeks so direct comparisons could be made, it is actually better to record in years as it can be seen more clearly on a graph (otherwise the graphs won't show the gestation data because of the short length of time in relation to life expectancy). Make sure you include a key so that it is clear that data is measured in different units.

Do animals with longer life expectancy h	
Animal	Gestation Period (week
goldfish	0.5
frog	1
parrot	3.5
salmon	5.5

Recording Datasets

Animal	Gestation Period	Life Expectancy
human	36 weeks	
lizard	10 weeks	
salmon	5.5 weeks	

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Graphing Two Datasets

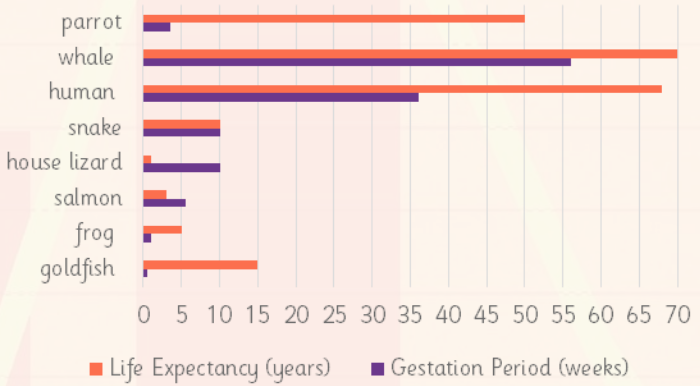
There are many different ways of graphing two datasets to compare:

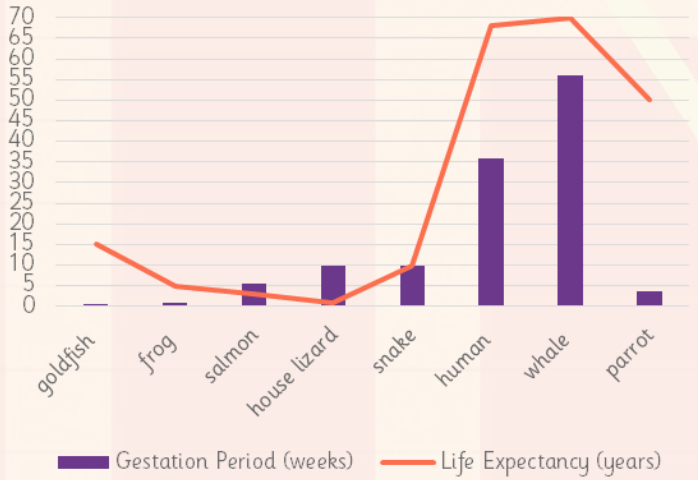
Considerations when choosing a graph:

- Is the data clearly shown?
- Can the data be understood?
- Can patterns be seen?
- Does it help to answer the question?

Other considerations:

- Is the scale correct?
- Can all the data be seen?
- Does it show the information from both datasets well or just one?





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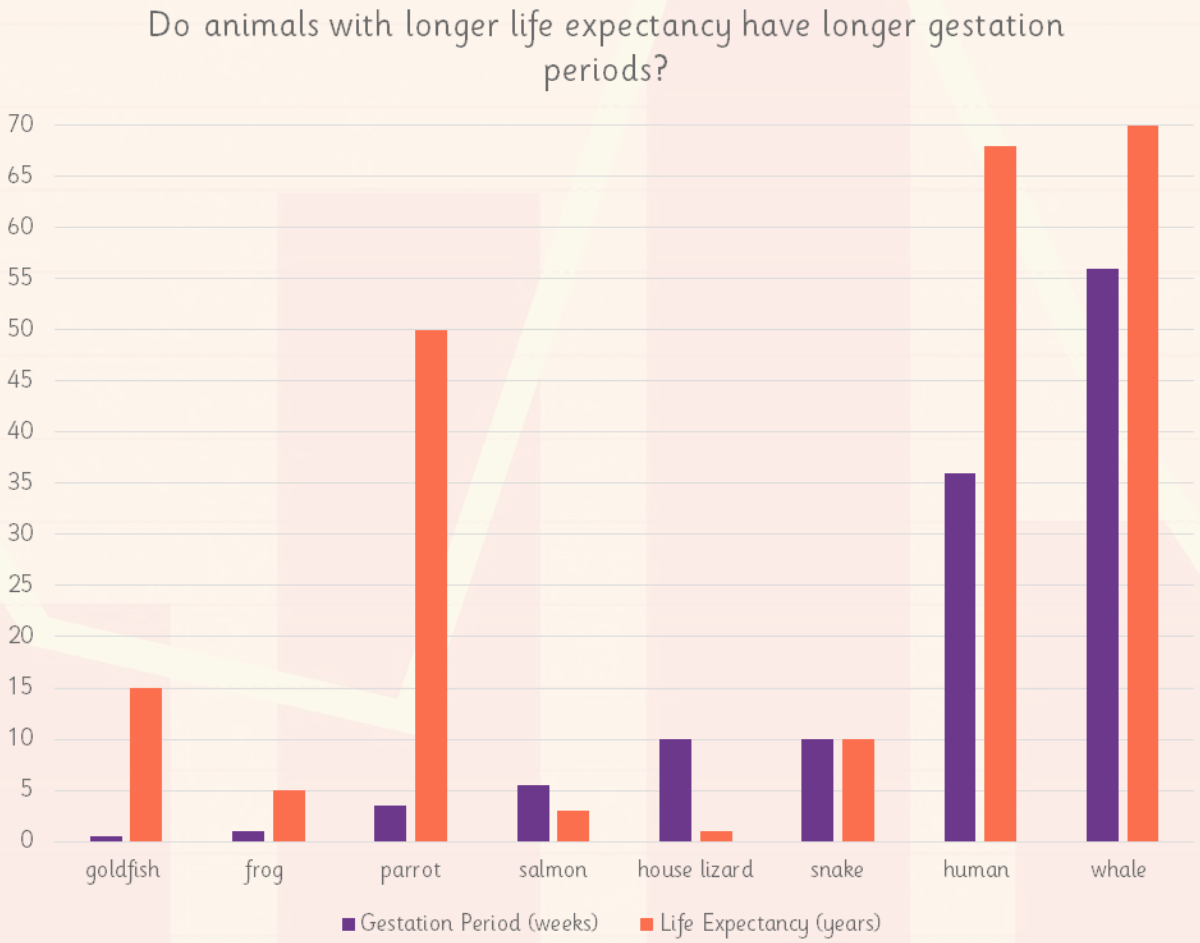
Vertical Bar Graph

Pros:
Data is easily compared for each animal.

Cons:
Patterns in the data can not be detected well.



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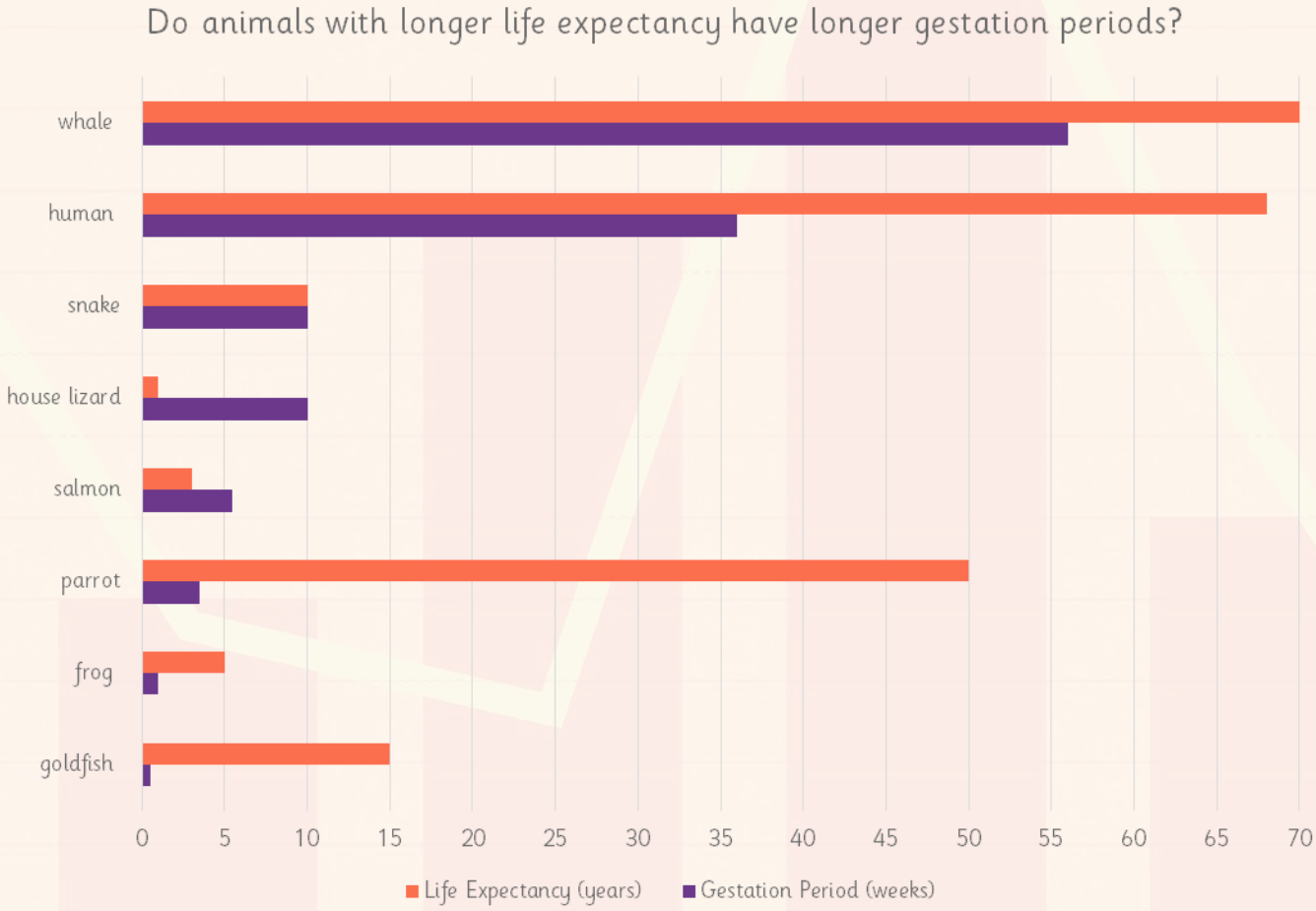
Horizontal Bar Graph

Pros:

Cons:



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Line Graph

Pros:

Cons:

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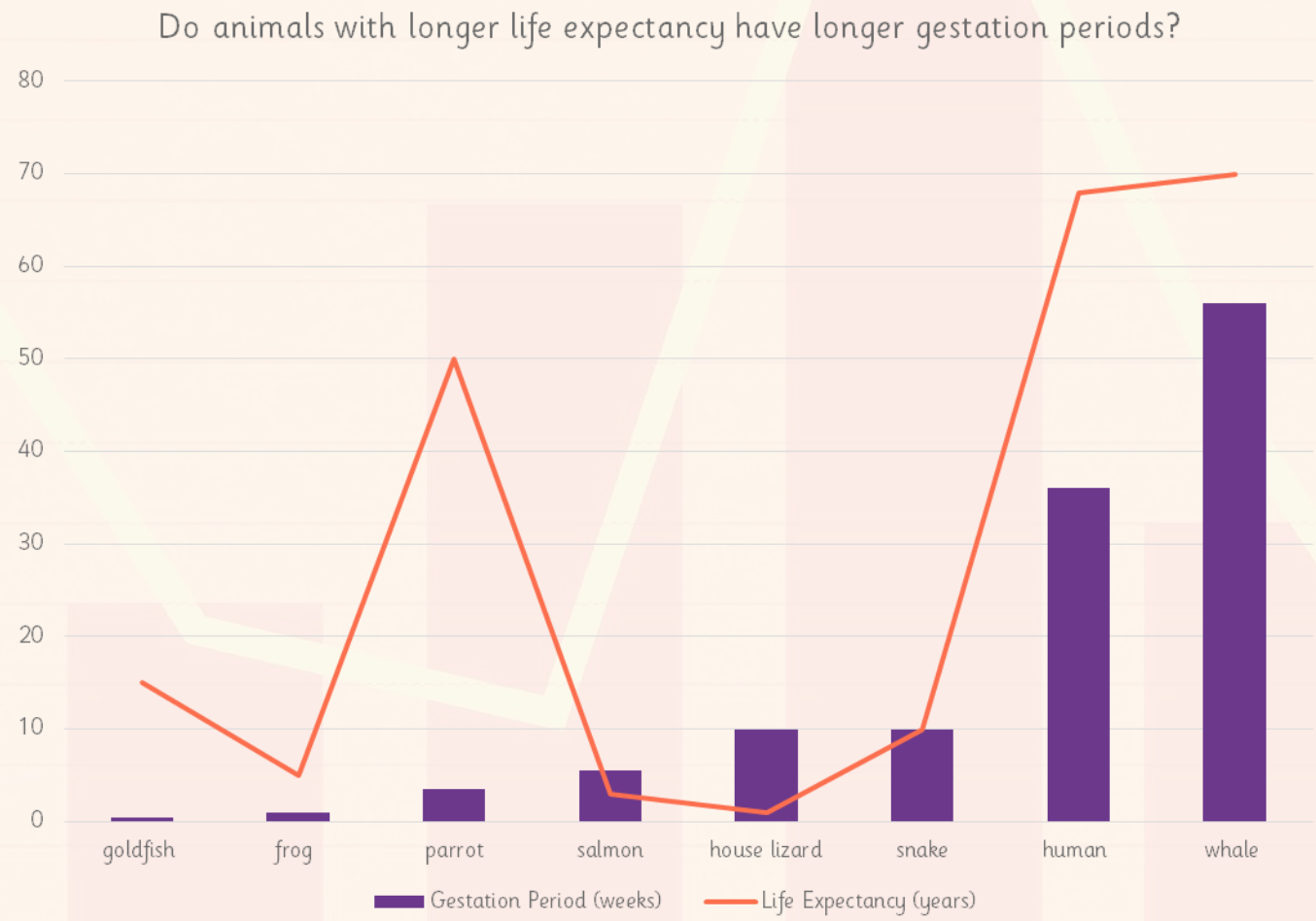
Mixed Bar and Line Graph

Pros:

Cons:



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Presenting Data

In your groups discuss:

Which is the best way to present your data?

Is there more than one type of graph? If so, on what basis will you choose?

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Analysing Data

What does the data tell us?

When you compare two different sets of data, you are attempting to see if there is a relationship between the two different variables you are analysing.

What types of relationship are there between variables?

1. Association: There is a relationship between the two variables as one affects the other but in a general way (not in every example).
2. Correlation: There is a relationship between the two variables but one does not necessarily cause the other.

   Positive correlation – one variable goes up and so does the other.

   Negative correlation – one variable goes up and the other one goes down.
3. Causal: One variable causes the other to change and this can be observed in all cases.

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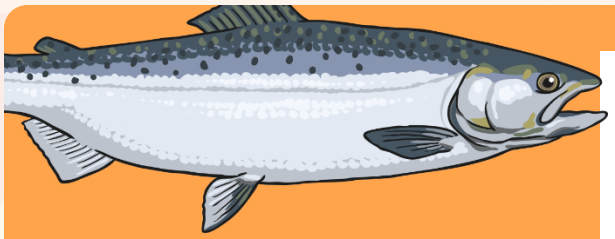
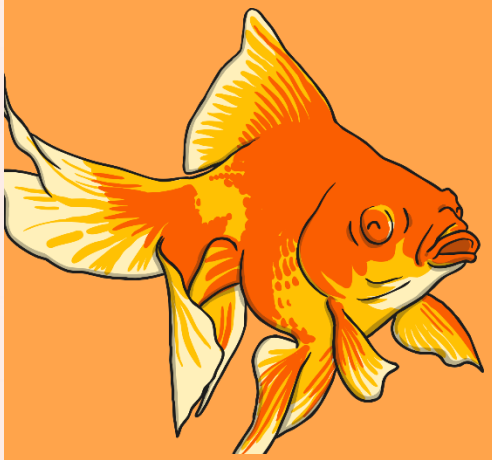
Reporting Findings





Reporting Findings

1. What type of graph(s) did you create? _____

2. Which type of graph best presented your data? _____

_____

3. What type of relationship do the two variables have? Tick only one:

- ☐ No relationship
- ☐ Association
- ☐ Positive correlation
- ☐ negative correlation
- ☐ Casual

4. Give examples from your data that proves it has the relationship you indicated in Q.3.

_____

_____

_____

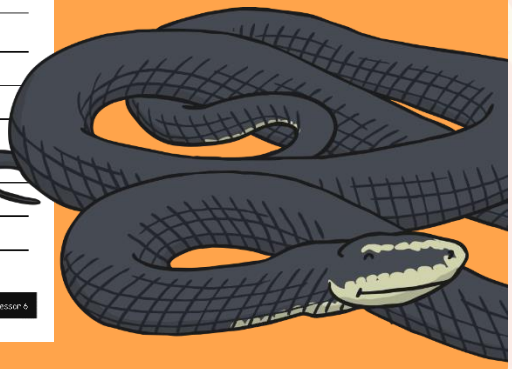
_____

5. 'Animals with longer life expectancies have longer gestation periods.' True or False?

_____

_____

_____



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