| ľ | lame: Date: | | | | | | | | | | | | |
|---|-------------|----------|--|---|-----------------------------------|--|---|---|---|--------------------------------------|---------------------------------|---------------------------------------|--|
| | | tec | Complet <u>on</u> . Read acher bef | e <u>at leas</u> the instr Fore mov | t three -uctions ving on to | of the ta for each o the ne evalu | isks belou task car xt task. \ ation que | u, <u>startir</u> refully, ai When yo estionnaii | ng with To nd get yo ou have f re. | ask A, th our work finished, d | ien Task checked complete | <u>B and</u> I by your the self | |
| 1 | Task A | | Task B | | Task C | | Task D | | Tas | Task E | | sk F | |
| | completed? | checked? | completed? | checked? | completed? | checked? | completed? | checked? | completed? | checked? | completed? | checked? | |
| | | | | | | | | | | | | | |

Self Evaluation Questionnaire

| Tick the box that best describes how confident you feel about each statement. | • | •• | |
|--|---|----|--|
| I know about the work of scientists to develop our understanding of evolution and inheritance. | | | |
| I can identify some of the characteristics which help an organism survive and thrive in its environment. | | | |
| I can describe the conditions of an environment. | | | |
| I can explain the process of natural selection. | | | |
| I can explain what might happen if an offspring has a new, advantageous variation. | | | |
| I can recognise some of the ways in which different species have evolved in different ways over time. | | | |

Now, write down some questions about evolution and inheritance that you would like to learn the answers to.

Name:

Date: Complete <u>at least four</u> of the tasks below <u>in any order</u>. Read the instructions for each task carefully, and get your work checked by your teacher before moving on to the next task. When you have finished, complete the self evaluation questionnaire.

| Task A | | Task B | | Task C | | Task D | | Task E | | Task F | |
|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|
| completed? | checked? |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

Self Evaluation Questionnaire

| Tick the box that best describes how confident you feel about each statement. | •• | ••• |
|---|----|-----|
| I know about the work of scientists to develop our understanding of evolution and inheritance. | | |
| I can identify some of the characteristics which help an organism survive and thrive in its environment. | | |
| I can describe the conditions of an environment. | | |
| I can explain the process of natural selection. | | |
| I can explain what might happen if an offspring has a new, advantageous variation. | | |
| I can recognise some of the ways in which different species have evolved in different ways over time. | | |

learn the answers to.

| Evolu | ition a | nd Inf | Task Chart 3C | | | | | | | | |
|------------|--|--------------------------------|--|---------------------------------|-------------------------------------|--|---|-------------------------------------|------------------------------------|------------------------------------|--------------------------|
| Name: _ | | | | | | | | | | | |
| F. | | Comple ask caref next to | te <u>all six</u> Gully, and <mark>ask. Whe</mark> | of the t get you en you h | asks beld r work c ave finisk | ow <u>in anu</u> hecked b hed, com | <u>y order</u> . H by your t <mark>plete the</mark> | lead the teacher b e self eva | instruct before m iluation c | ions for noving on questionn | each to the naire. |
| Tas | Task A Task B Task C Task D Task E Tas | | | | | | | | k F | | |
| completed? | checked? | completed? | checked? | completed? | checked? | completed? | checked? | completed? | checked? | completed? | checked? |
| | | | | | | | | | | | |
| | | I | | 1 | 1 | 1 | 1 | 1 | | I | |

Self Evaluation Questionnaire

| Tick the box that best describes how confident you feel about each statement. | | •• | |
|--|--------------|-----------|-----------|
| I know about the work of scientists to develop our understanding of evolution and inheritance. | | | |
| I can identify some of the characteristics which help an organism survive and thrive in its environment. | | | |
| I can describe the conditions of an environment. | | | |
| I can explain the process of natural selection. | | | |
| I can explain what might happen if an offspring has a new, advantageous variation. | | | |
| I can recognise some of the ways in which different species have evolved in different ways over time. | | | |
| Now, write down some questions about evolution and inherit learn the answers to. | tance that j | you would | l like to |

| Task A | The cards describe some scientists whose work developed our understanding of the process of evolution. Read the card. Swap cards with a partner. Take turns reading the questions at the bottom of the card to your partner. Can you answer at least three of the questions correctly? |
|-----------|---|
| Task B | Choose one of the pictures of organisms in their environment. On one side of some paper/mini-whiteboard, write down words which describe the organism's environment. Write down some descriptions of characteristics which help that animal survive in its environment on the other side. You might need books or the internet to help you. Look at a partner's work - do you agree/disagree with anything? Why? |
| Task C | Look at the pictures of the rainforest floor and canopy. There are different species of monkey living in each part of the environment. How might the adaptations of canopy-dwelling monkeys vary from floor-dwelling monkeys? You might consider these things: size; colouring; hands, feet and tail; ways of moving; diet; sleeping habits; raising offspring. Draw two columns on some paper, noting the differences in each column. |
| Task D | Read each of the cards describing a stage in the process of natural selection occurring in a <i>toco toucan</i> population. Can you put the jumbled up cards in the correct order? Work with a partner or with your group. Make sure you agree. |
| Task E | Read the description of how a new, random variation can appear in the offspring of a species. Can you draw and label an 'evolution flow chart' to show what might happen over several generations? |
| Task F | Look at the examples of different species in the order of primates. Do you recognise any? Do you know of any more? Discuss their characteristics. Read each of the cards; they have statements that might apply to all primates, or only to particular species in the order of primates. Work with a partner or in small groups to sort the statements into two groups: statements which describe all primates, and statements which describe only some species of primate. |

Carl Linnaeus 1707-1778



Carl Linnaeus was an important scientist whose work on the classification of animals continues to be of huge significance today.

Linnaeus was born in Sweden, where he studied botany (an area of scientific study concerned with plant life) and spent many years travelling around the country, studying its plants and animals.

In 1735, Linnaeus published an important book called <u>Systema Naturae</u>. In the book, he explained his new system for naming and classifying animals. It was much clearer than previous systems, and everyone started using it. The modern system of classifying things which is used today is based on the system Linnaeus developed.

Where was Carl Linnaeus (pronounced 'lin-ay-us') born?

What area of science did he study?

What was his book 'Systema Naturae' about?

Why was the book so important?



Charles Darwin 1809-1882

Charles Darwin was a naturalist who is considered by many to be one of the most important scientists of all time due to his work on natural selection and evolution.

Darwin was born in Shrewsbury, England. On a five-year voyage around South America, New Zealand and many other places, Darwin made many amazing discoveries. He found new species, fossils, and evidence all around him that plants and animals had evolved over time.

In 1859, Darwin published his book, <u>On The Origin Of Species</u>. It explained the process of natural selection. His ideas were revolutionary, and changed scientific thought about the lives of all living things. Today, his work influences many areas of scientific study.

Where was Darwin born?

What did he discover on his five-year voyage?

What did he write about in his book?

What was the impact of his book being published?



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This natural selection flow chart is jumbled up! Cut the pieces out. With a partner or in a small group, discuss what order they should go in. Can you all agree?



When species such as the *toco toucan* from central and eastern South America reproduce, the population will naturally tend to grow at a gradual rate.

The offspring with the new variation is able to eat more berries and grow to become a healthy, adult bird. Other toucans may not be able to eat enough food. They may be weaker and less able to escape predators; some may even starve.

Toucans eat berries growing high up in the rainforest canopy. The new offspring, with its slightly longer beak can reach berries further away from the branches it can balance on.

The offspring with the new variation finds a mate and reproduces. Some of its offspring inherit the slightly longer beak.

Over many generations, the characteristic of having a slightly longer beak gradually spreads throughout the toucan population.

A baby toucan is hatched. It differs from its parents in a number of small, random ways. One variation is more significant: it has a slightly longer beak.



Giant anteater

The giant anteater is native to South America. It can be found in grasslands (pictured) and in rainforests. It mainly eats ants and termites, found in mounds and in rotting wood on the rainforest floor. It can dig out ants and termites with its long, sharp claws and get into hard-to-reach places with its long nose. It has a specialised long tongue for licking up the ants and termites.

<u>Variation</u>

Imagine that an offspring is born with a new variation: it has a slightly longer tongue. What might happen to the anteater population over several generations?

