

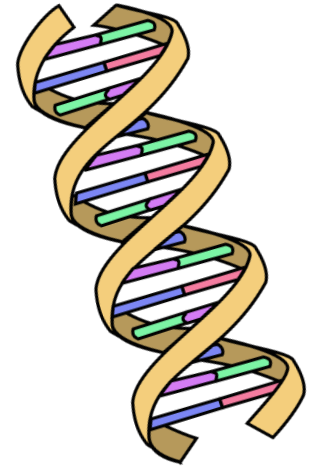
# How do Genetics Work?

Kia ora explorers!

This worksheet is to help you learn about the study of genetics!

Start by watching this LEGO Discover video on YouTube:

<https://www.youtube.com/watch?v=X0UgORHFpUg>



## QUESTIONS:

How many people in the world share your exact genetic make-up?

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Describe the term inheritance:

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Every cell in every organism contains instructions. What are the instructions for?

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## Research:

Find out what DNA stands for.

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Different sections of DNA code for specific traits. What are the different sections of your DNA called?

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Give an example of a specific trait.

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## How do Genetics Work?

**Research:**

What is the name of the scientist who thought giraffes grew long necks by stretching to reach leaves?

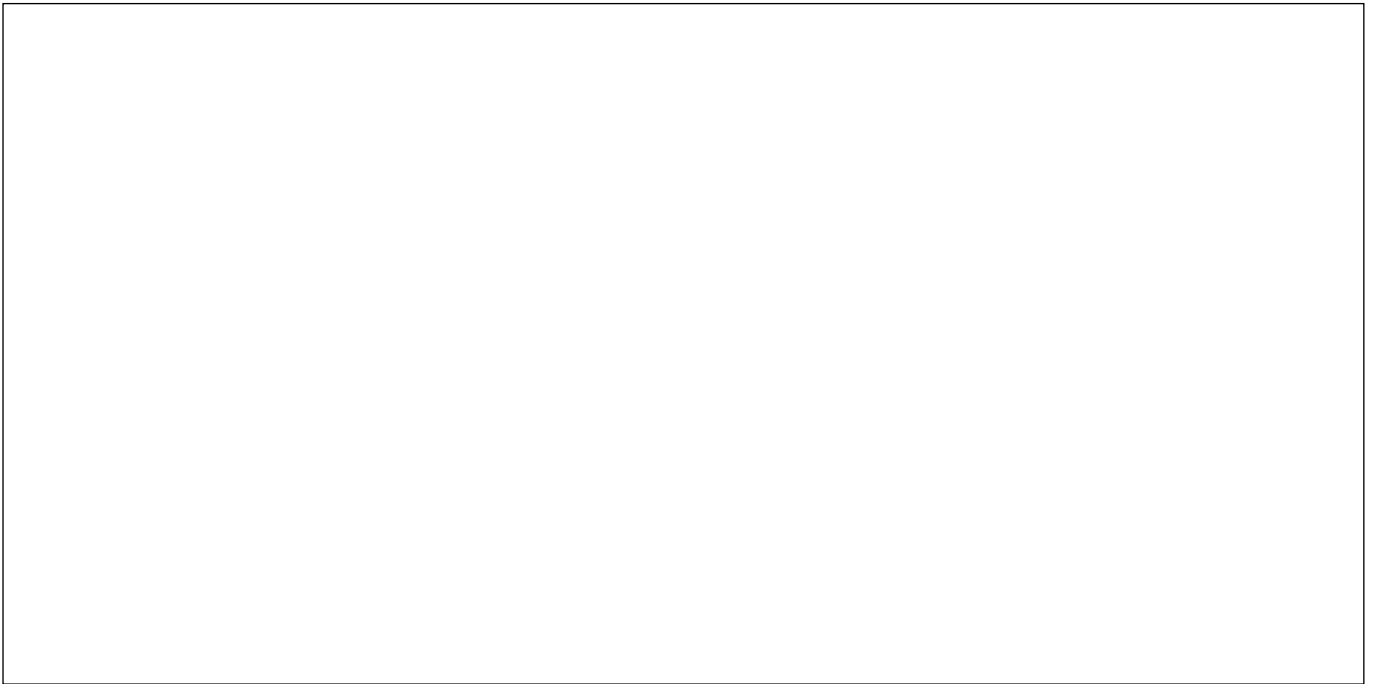
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**Research:**

DNA has a special shape. Find out what the shape of DNA is called.

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Draw this shape, or have a go at building it and take a photo!



How many copies of each gene do cells have?

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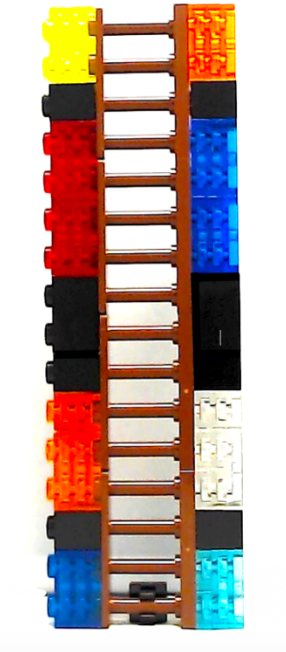

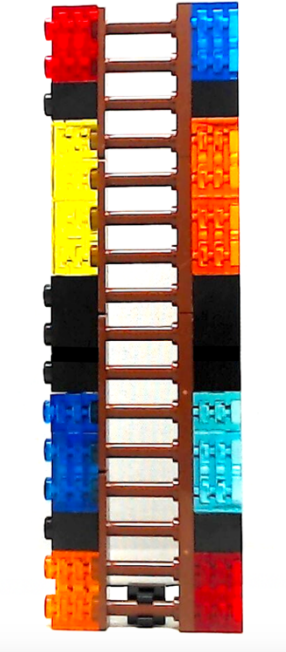
**Expert Question:**

How many copies of each gene are present in sperm and egg cells before fertilisation occurs?

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## LET'S BUILD IT!

Attach a photo or draw what the child's DNA might look like:

Mother's DNA	Child's DNA	Father's DNA
		

## QUESTIONS:

In the video, a large yellow or brown brick represents one copy of the gene for hair colour. Do some research and find out what we call the versions of a gene that produce different traits.

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How many yellow gene blocks do you need to have blond hair?

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How many brown blocks do you need to have brown hair?

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## How do Genetics Work?

What are these types of inheritance called?

Yellow/blond is a \_\_\_\_\_ allele.

Brown is a \_\_\_\_\_ allele.

What determines which genes a sperm or egg cell will contain?

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Plants can reproduce sexually or asexually. Which type of reproduction muddles up parental genes?

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Which type is cloning?

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