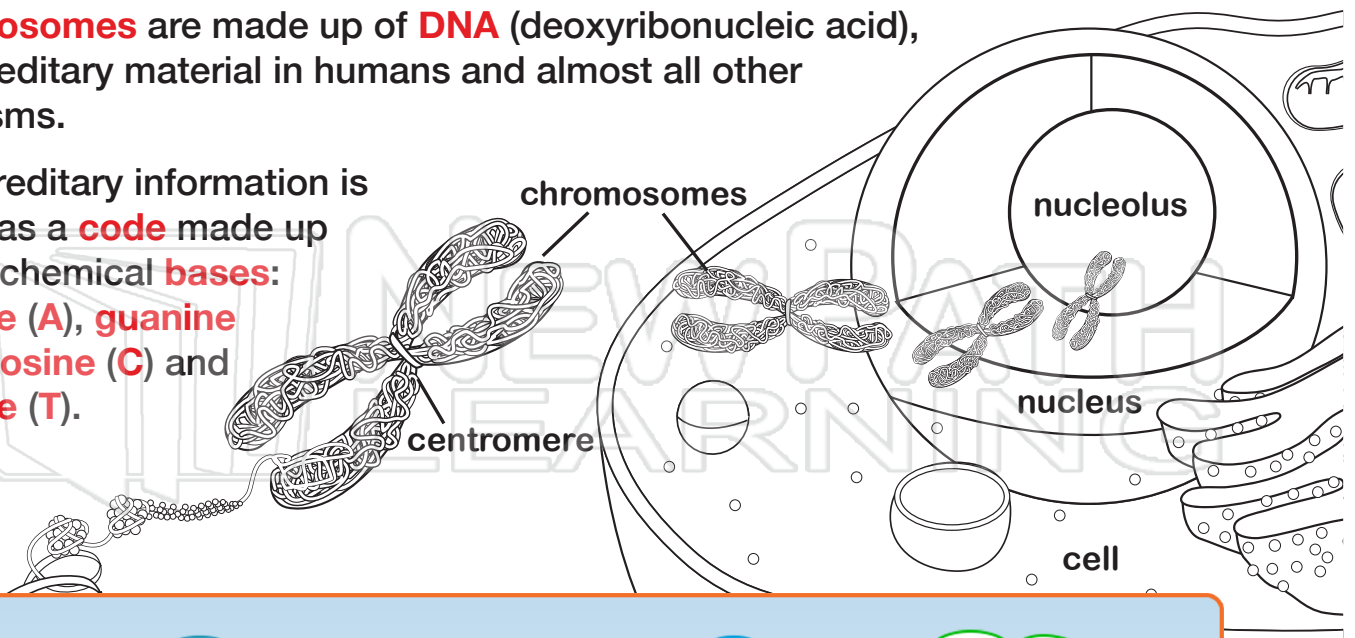




Name _____ Class _____ Date _____

Chromosomes are made up of **DNA** (deoxyribonucleic acid), the hereditary material in humans and almost all other organisms.

The hereditary information is stored as a **code** made up of four chemical **bases**: **adenine (A)**, **guanine (G)**, **cytosine (C)** and **thymine (T)**.



DNA pair up each **T** and form **base**

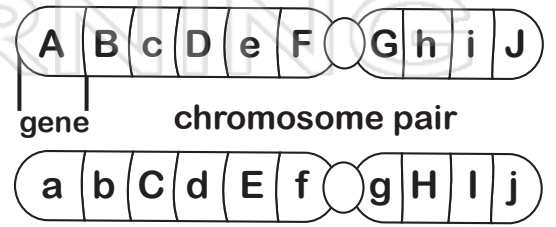
PREVIEW

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proteins

The **sequence of bases** determines the information available for building **proteins**, similar to the way in which letters of the alphabet appear in a certain order to form words and sentences.

Each **chromosome** contains thousands of **genes**. A **gene** is a section of a **DNA** strand which contains the information for cells to make one **specific protein**.



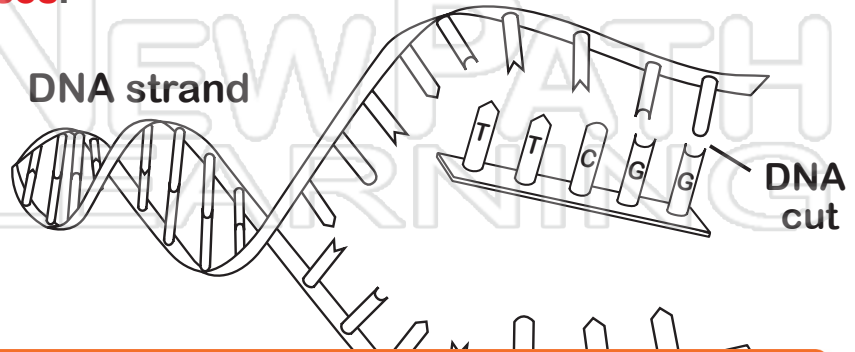


Name _____ Class _____ Date _____

DNA Fingerprinting

Each person has a unique set of **DNA**. As a result of this uniqueness, it can be used to produce a genetic fingerprint known as **DNA fingerprinting**. It is a method used by scientists to **solve crimes**, determine **familial relationships**, or to track **hereditary diseases**.

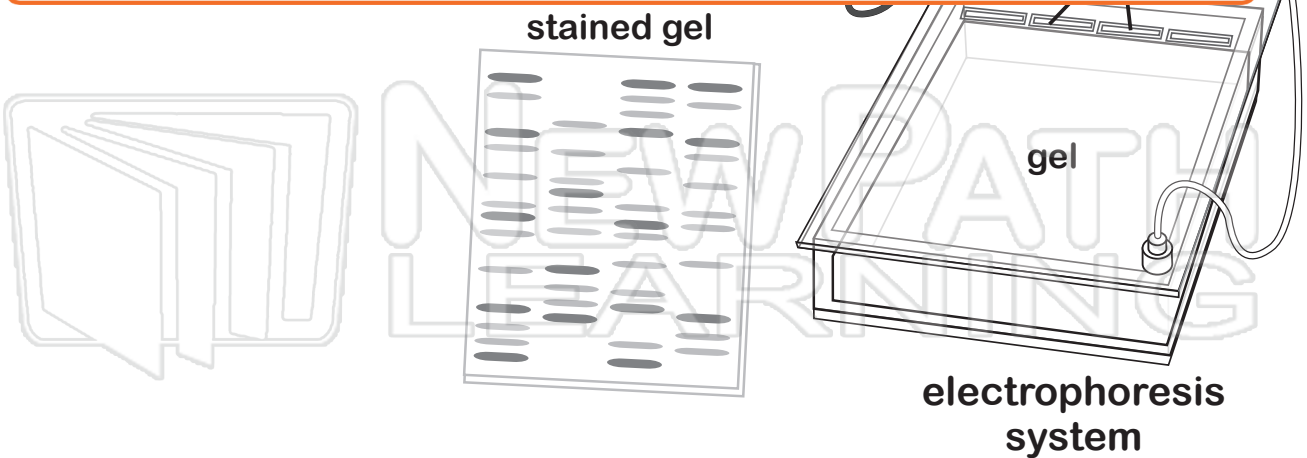
1. **DNA is extracted** from the cell.



2.

The preview box contains a row of ten diverse children standing on a green patch of grass. Above them are four thought bubbles containing various educational icons: a microscope and a globe, a globe and a target, an atom and a pie chart, and a bar chart and mathematical symbols. Below the children, the word 'PREVIEW' is written in large, bold, blue and orange letters. Underneath that, the text reads: 'Please [Sign In](#) or [Sign Up](#) to download the printable version of this worksheet'.

4.





Name _____ Class _____ Date _____

Human Karyotype

A **karyotype** is a picture of the complete **set of chromosomes** in a cell. Scientists examine a karyotype to identify and evaluate the size, shape and number of chromosomes in a human cell.

A normal human male karyotype is represented as **46,XY** and a normal female karyotype is represented as **46,XX**.

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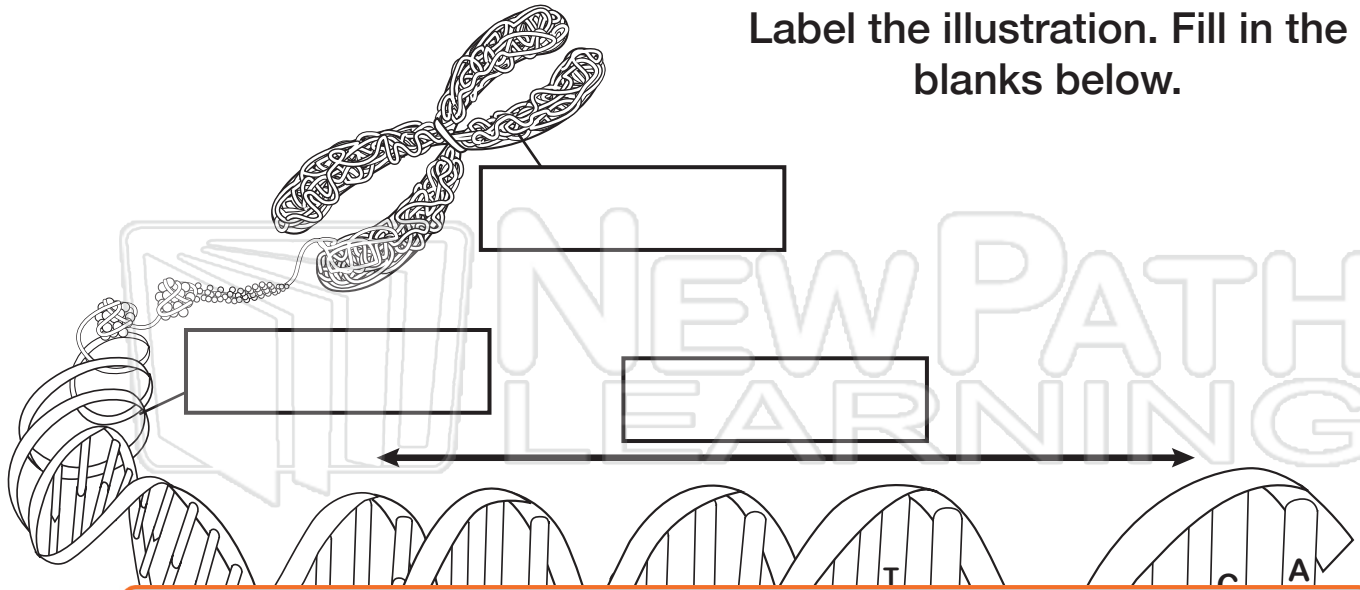
19 20 21 22 or XX (female) XY (male)

Extra, missing or abnormal positions of chromosome pieces can cause problems with a person's growth, development and body functions. Individuals with **chromosomal disorders** include **Down Syndrome** (47, XY, +21) and **Turner's Syndrome** (45, X) among others.



Name _____ Class _____ Date _____

Label the illustration. Fill in the blanks below.



PREVIEW

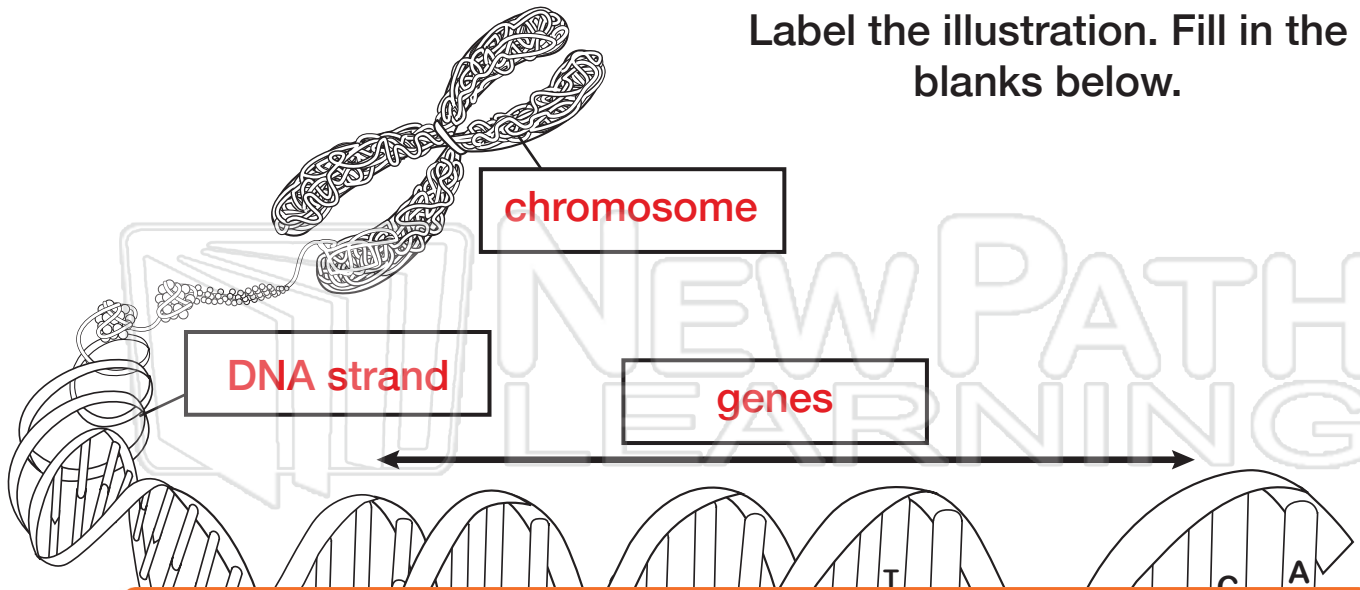
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_____ are made up of _____, the hereditary material in humans and almost all other organisms. The sequence of _____ in **DNA** determines the information available for building _____. Each _____ contains thousands of _____. A _____ is a section of a **DNA** strand which contains the information for cells to make one specific _____.



Answer Key

Label the illustration. Fill in the blanks below.



The illustration shows a group of diverse children standing on a green field. Above them are four thought bubbles containing icons for science (microscope, beaker, globe), math (calculator, plus and minus signs), and general education (ABC, bar chart). To the right of the children, a box contains the text 'se' and 'irs'.

PREVIEW

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Chromosomes are made up of **DNA**, the hereditary material in humans and almost all other organisms. The sequence of **bases** in **DNA** determines the information available for building **proteins**. Each **chromosome** contains thousands of **genes**. A **gene** is a section of a **DNA** strand which contains the information for cells to make one specific **protein**.