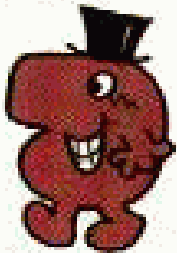


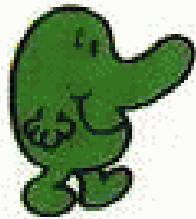
# Variation and Inheritance

LO: To learn how characteristics can vary.

## The Mr Men Match



11 Mr  
Uppity



4 Mr  
Nosey



2 Mr  
Greedy



5 Little Miss  
Tiny



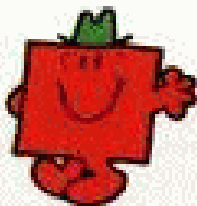
4 Little Miss  
Sunshine



30 Little Miss  
Sporty



12 Mr  
Small



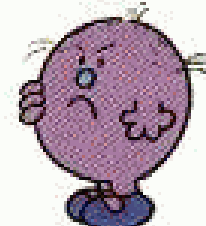
26 Mr  
Strong



5 Mr  
Sneeze



13 Little Miss  
Chatterbox

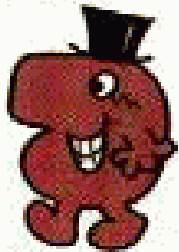


26 Little Miss  
Stubborn

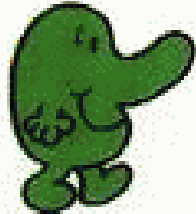


19 Little Miss  
Busy

## Meet our Mr Men



11 Mr  
Uppity



4 Mr  
Nosey



2 Mr  
Greedy



12 Mr  
Small



26 Mr  
Strong



5 Mr  
Sneeze

## And our Little Misses



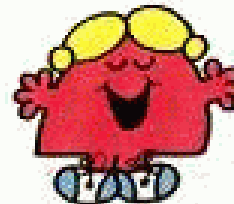
5 Little Miss  
Tiny



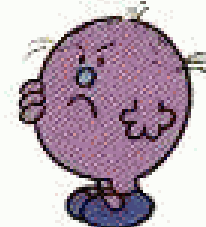
4 Little Miss  
Sunshine



30 Little Miss  
Sporty



13 Little Miss  
Chatterbox

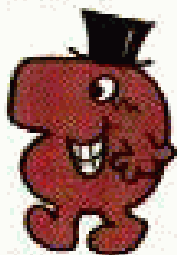


26 Little Miss  
Stubborn

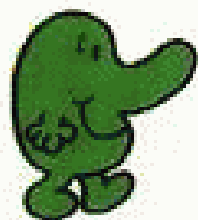


19 Little Miss  
Busy

Now lets meet their children!



11 Mr  
Uppity



4 Mr  
Nosey



2 Mr  
Greedy



5 Little Miss  
Tiny



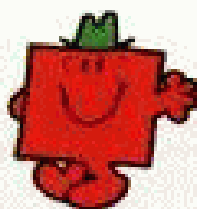
4 Little Miss  
Sunshine



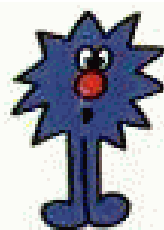
30 Little Miss  
Sporty



12 Mr  
Small



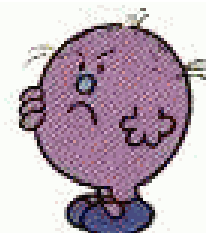
26 Mr  
Strong



5 Mr  
Sneeze



13 Little Miss  
Chatterbox

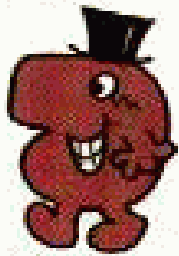


26 Little Miss  
Stubborn

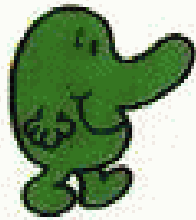


19 Little Miss  
Busy





11 Mr  
Uppity



4 Mr  
Nosey



2 Mr  
Greedy



5 Little Miss  
Tiny



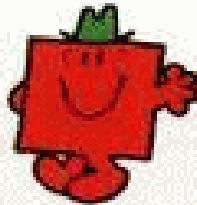
4 Little Miss  
Sunshine



30 Little Miss  
Sporty



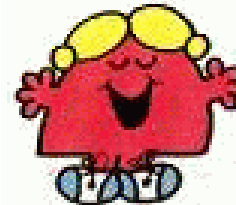
12 Mr  
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26 Mr  
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Sneeze



13 Little Miss  
Chatterbox



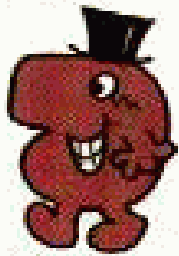
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Stubborn



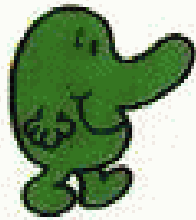
19 Little Miss  
Busy

Who do you think  
are his parents?  
Write the answers in  
your book.





11 Mr  
Uppity



4 Mr  
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2 Mr  
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5 Little Miss  
Tiny



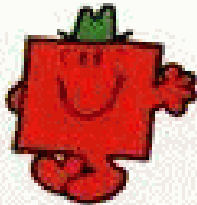
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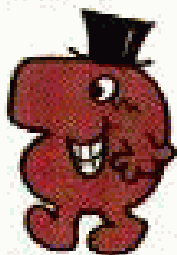
26 Little Miss  
Stubborn



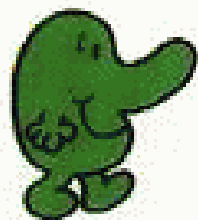
19 Little Miss  
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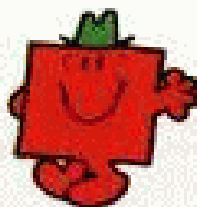
4 Little Miss  
Sunshine



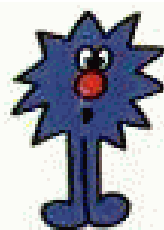
30 Little Miss  
Sporty



12 Mr  
Small



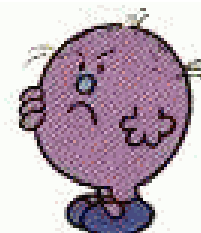
26 Mr  
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5 Mr  
Sneeze



13 Little Miss  
Chatterbox

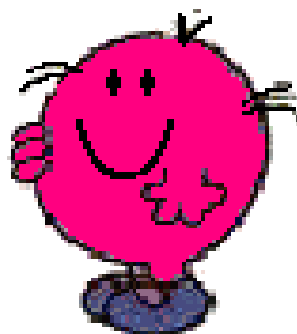


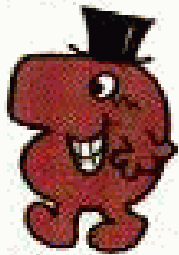
26 Little Miss  
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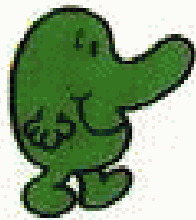
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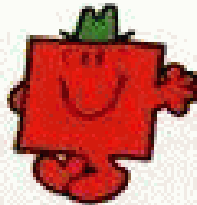
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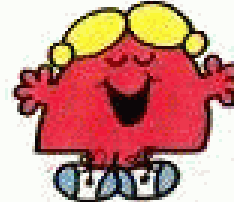
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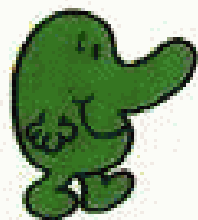
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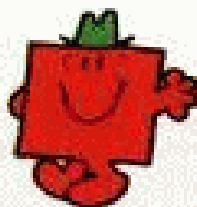
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Sunshine



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Small



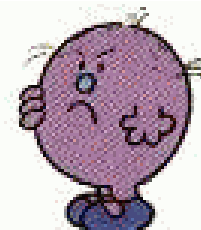
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13 Little Miss  
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26 Little Miss  
Stubborn

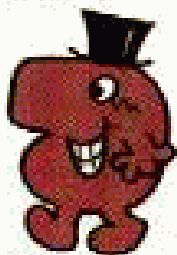


19 Little Miss  
Busy

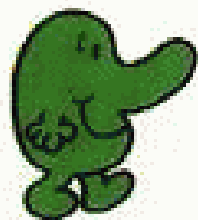
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Write the answers in  
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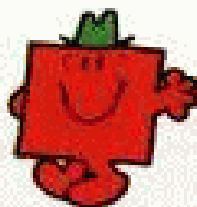
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Sunshine



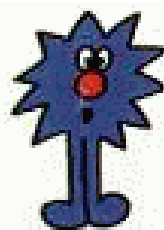
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Sporty



12 Mr  
Small



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5 Mr  
Sneeze



13 Little Miss  
Chatterbox



26 Little Miss  
Stubborn



19 Little Miss  
Busy

Who do you think  
are her parents?  
Write the answers in  
your book.



# Characteristics

A **characteristic** is a feature of an organism. It can be something we can see (like hair colour) or something we can't see (like blood group).

All humans have different combinations of characteristics, meaning we all look different.

This difference in our characteristics is called **variation**.



# What did we learn from this?



- Children inherit characteristics from their parents. These are called INHERITED CHARACTERISTICS.
- They are coded for by GENES- little bits of DNA in our cells' NUCLEUI.
- We get half our genes from our mother and half from our father because the nuclei of their cells fuse together in fertilisation.
- If two parents have a certain characteristic then their child may show it even more (e.g. Mr Small + Little Miss Tiny = Mr Very Small!)

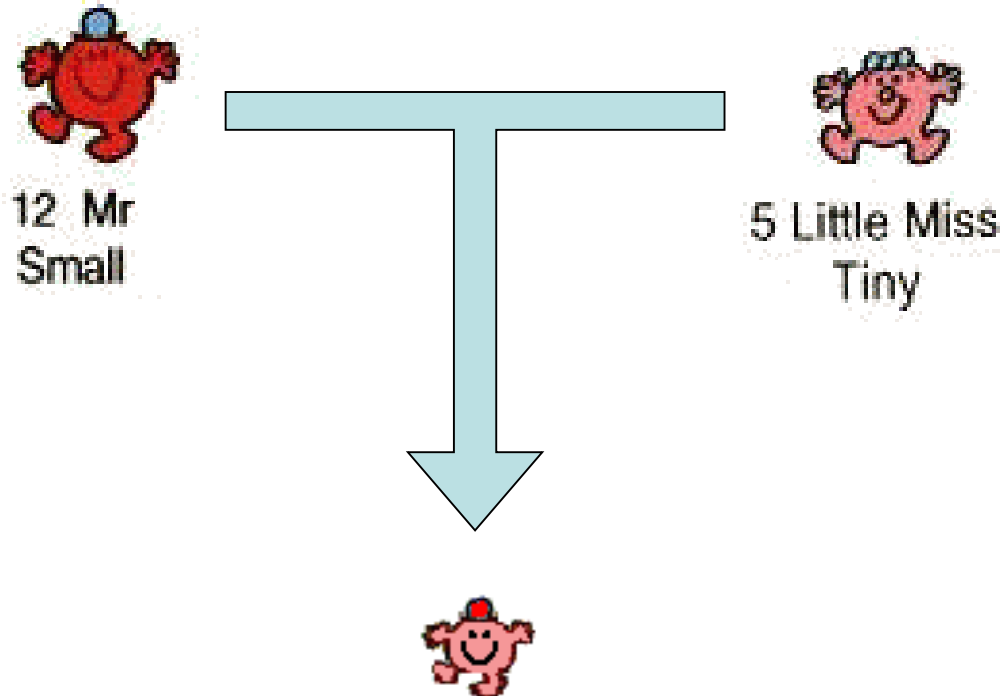


# Genetic information recap...



- The instructions that make up a plant or animal comes from their **parents**.
- $\frac{1}{2}$  comes from the **sperm** and  $\frac{1}{2}$  from the **egg**
- These instructions are found in the **nucleus** of the cells.
- The instructions for each characteristic are called **GENES**.

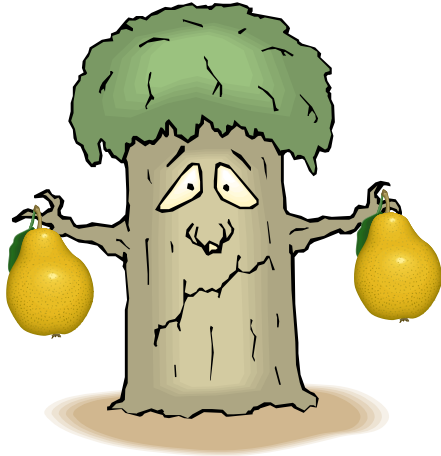
We saw that when Mr Small and Little Miss Tiny produced a child it was even smaller.



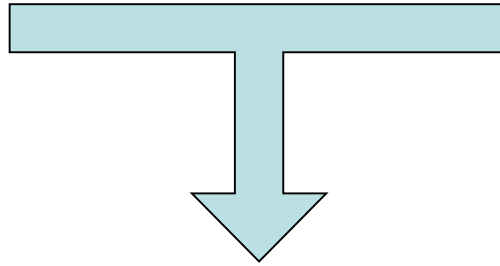
What would happen if Mr Very Small had a child with Little Miss Miniscule??



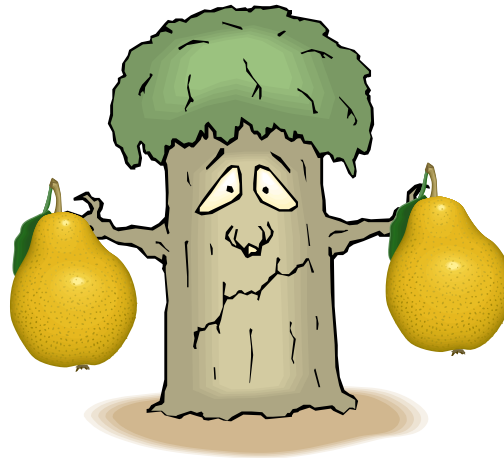
This is called selective breeding and can be used to make larger animals and crops that produce more fruit



Large fruited Dad



Large fruited Mum



Very large fruited child!

# Environmental Characteristics

- Some of our features are not determined by our parents, but rather how we live and the choices we make. These are ENVIRONMENTAL CHARACTERISTICS.
- Some things such as scars, how big your muscles are, what you eat, where you live etc. are all environmental characteristics.
- Some can be both, for example your weight.

Task 1: complete the worksheet below- you just need to fill in the missing words! The answers are on the page below.

Task 2: have a go at creating your own Mr Men & Little Miss children! Pick a Mr.Man and a Little Miss, draw them both and then draw what their child might look like, labelling the different characteristics they have inherited from which parent. For example... (I have only done a few of the characteristics- there are lots more!)

Spiky head from  
father



Yellow hair from  
mother

Long legs from  
father



# Variation and Characteristics

All humans look \_\_\_\_\_ from one another. This is because we all have different \_\_\_\_\_ of features that make us who we are. These features are called \_\_\_\_\_.

The differences between humans (or any other organism) are called \_\_\_\_\_.

Characteristics can be \_\_\_\_\_, environmental or both.

**Both types of characteristics cause variation in organisms and make them look different from one another.**

Combinations	Characteristics	Variation	Different
Inherited			

## Inherited Characteristics

We get some of our characteristics from our \_\_\_\_\_. These are called \_\_\_\_\_ characteristics.

The instructions for these features are passed down to us by \_\_\_\_\_, which are little sections of DNA found in the \_\_\_\_\_ of our cells.

We get half of our genes from our \_\_\_\_\_ and half from our father. This is because the nuclei of their \_\_\_\_\_ cells fuse together in \_\_\_\_\_ and make a full set of "instructions" that makes us.

Nuclei	Inherited	Mother	Fertilisation	Parents
Genes	Sex			

## Environmental Characteristics

Some of our characteristics are determined by the way we live the choices we make.

List three environmental factors that can affect our characteristics:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Some of our characteristics are very complicated and are a combination of **environmental** and **inherited** factors.

# Variation and Characteristics

All humans look **different** from one another. This is because we all have different **combinations** of features that make us who we are. These features are called **characteristics**.

The differences between humans (or any other organism) are called **variation**.

Characteristics can be **inherited**, environmental or both.

**Both types of characteristics cause variation in organisms and make them look different from one another.**

Combinations	Characteristics	Variation	Different
Inherited			

## Inherited Characteristics

We get some of our characteristics from our **parents**. These are called **inherited** characteristics.

The instructions for these features are passed down to us by **genes**, which are little sections of DNA found in the **nuclei** of our cells.

We get half of our genes from our **mother** and half from our father. This is because the nuclei of their **fertilisation** cells fuse together to make a full set of “instructions” that makes us.

Nuclei	Inherited	Mother	Fertilisation	Parents
Genes				

## Environmental Characteristics

Some of our characteristics are determined by the way we live the choices we make.

List three environmental factors that can affect our characteristics:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Some of our characteristics are very complicated and are a combination of **environmental** and **inherited** factors.

There are lots of these to choose from! Things like what food you eat, how big your muscles are, if you have any scars etc.