



# How are new medicines made?

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# Creating a new medicine

- How do we make a new medicine?....
- Today we are going to see how a new medicine is made and where it comes from, by following the story of **Ellie's Medicine.**
- We will also talk about the different jobs involved in making a new medicine.



# Ellie's Medicine



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**This is Ellie.**

**Ellie is a happy girl - but  
tonight she feels sad.**

**Her head hurts.**

**Her throat hurts.**

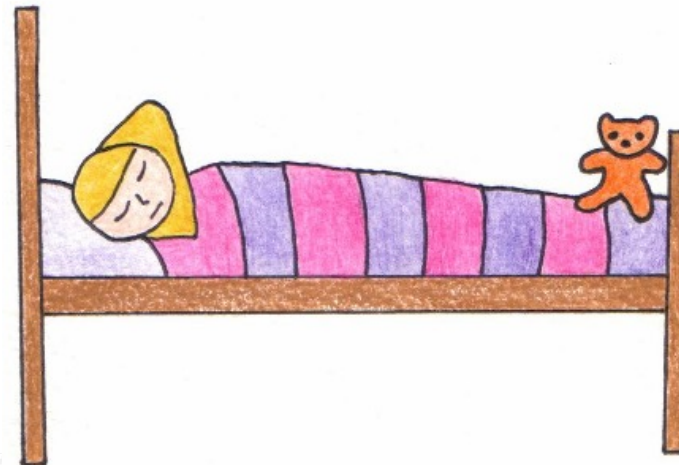
**Ellie feels poorly!**



**Tucked up snugly in her bed,  
Ellie hopes she feels better tomorrow.**

**If not, she might need some medicine.**

**Soon she is fast asleep  
and dreaming ...**



**Ellie dreams she is at  
the doctor's.**

**Dr William smiles at her.**

**He looks in Ellie's ears.**

**He feels Ellie's neck.**

**He looks at her very  
sore throat while Ellie  
says 'Aaaah!'**



**'Poor Ellie! You've got tonsillitis,' says Doctor William.**

**'I'll give you some medicine to help you get better.'**

**'Thank you' says Ellie 'But where does my medicine come from?'**

**'Try the pharmacist!' smiles Dr William ...**



**In her dream, Ellie visits  
Neela at the pharmacy.**

**There are lots of things to  
look at!**

**Neela mixes Ellie's medicine  
in a special bottle.**

**'Thank you' says Ellie 'But  
where does my medicine  
come from?'**

**'Fred brings it in his lorry'  
answers Neela with a smile.**



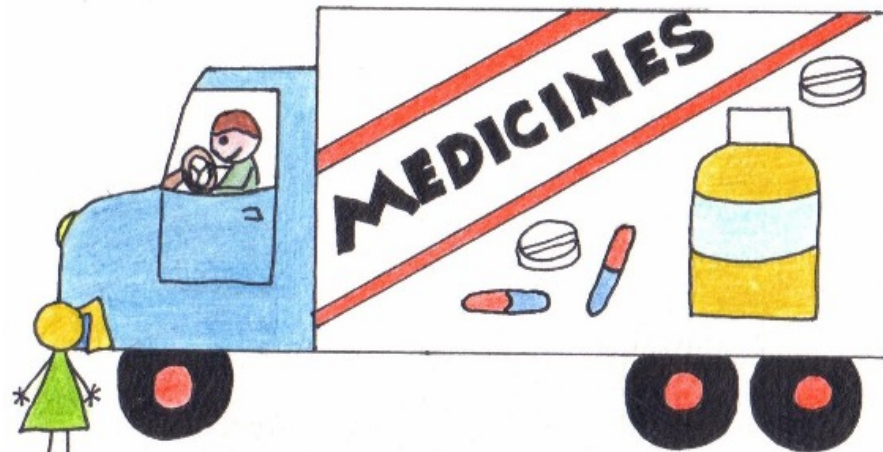


**Ellie looks up and up  
into the lorry cab.**

**'Can you tell me where  
my medicine comes  
from?' she asks Fred.**

**'I get it from the  
medicines factory.**

**It's a long way away  
and very, very big!' says  
Fred**

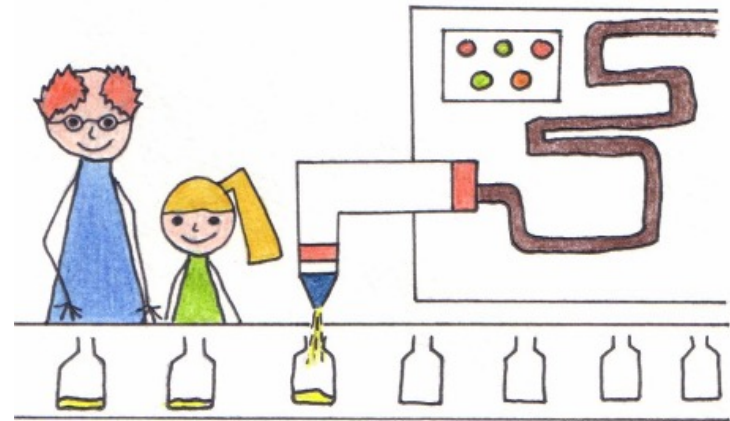


**Ellie sees a huge machine putting yellow powder into bottles.**

**'That's your medicine' says Mr Edward, who looks after the factory. 'We make tonnes of it here!'**

**'Thank you' says Ellie politely 'But where does my medicine REALLY come from?'**

**'Ah' says Mr Edward ' You need to talk to the doctors at the medicines company...'**



**'We are testing a new medicine,' says Dr Felix.**

**'We try to make sure it works well and is safe to use by giving it to some of our patients,' adds Dr Sarah. 'George has tried this one for us'**

**'Yes, and I'm feeling much better now.' says George**

**'Thank you,' says Ellie 'But I'm still not sure where my medicine comes from.'**

**'Talk to our company scientists!' smile the doctors.**



**'We do thousands of tests on every new medicine' says Dr James, busy in the laboratory.**

**'We have to answer two big questions - will it make you better and is it safe?'**

**'Thank you,' says Ellie  
'But I'm still not sure –  
WHERE does my  
medicine come from?'**

**'You need our research  
team' grins Dr James.  
'Off you go ...'**



**Ellie peeps out in surprise from some enormous leaves. What a strange dream this is!**

**'I'm looking for living things which might make people better,' says Thomas, a rather special scientist.**

**'The ideas for some of our best medicines come from plants, fungi and bacteria!'**



**Ellie blinks – and the plants are gone.**

**She's back in a laboratory.**

**Patrick and Yasmin are busy testing chemicals to see if any of them might make a good medicine.**

**Ellie thinks they look VERY busy!**

**Another blink and..**

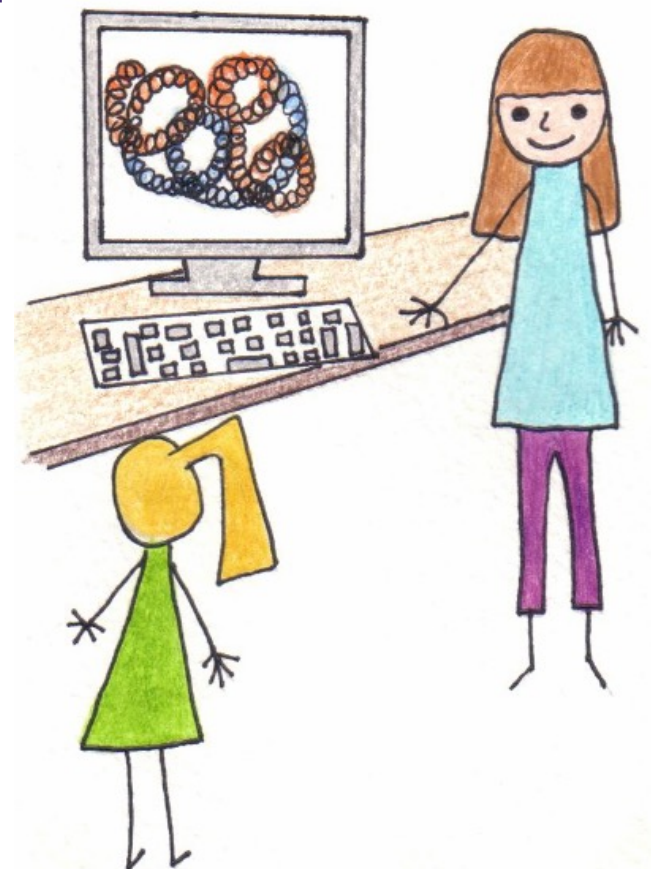


**..she is looking at a computer!**

**Anna uses computers to help find out which chemicals will make the best medicines.**

**'All new medicines start off with people like Patrick, Thomas, Yasmin and me' she explains.**

**'Oh thank you!' cries Ellie  
'Now I know the answer to my question...'**





**Ellie wakes up.**

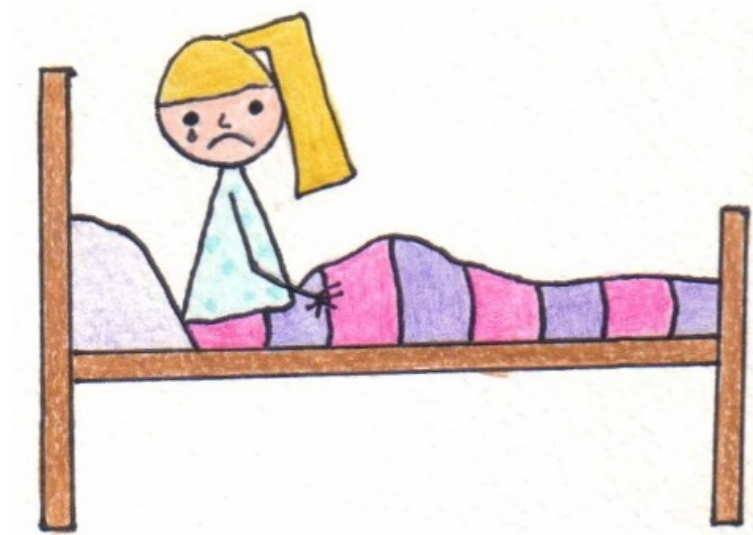
**Her head still hurts.**

**Her throat still hurts.**

**Ellie STILL feels poorly.**

**'No school for you today!'  
says Ellie's Mum.**

**And she takes Ellie to the doctor's.**





**Ellie is at the doctor's.**

**Dr William smiles at her.**

**He looks in Ellie's ears.**

**He feels Ellie's neck.**

**He looks at her very sore  
throat while Ellie says  
'Aaaah!'**



**‘Poor Ellie! You’ve got tonsillitis’ says Doctor William.**

**‘I’ll give you some medicine to help you get better.’**

**‘Thank you’ says Ellie ‘And do you know what? I know EXACTLY where my medicine comes from!!’**



# THE END



## Discovery and development of medicines

- **By studying a disease, scientists can understand what causes the illness and which cells in the body are involved**
- **Research can help scientists to develop new medicines to treat diseases and to relieve symptoms.**
- **It takes more than 10 years of careful planning and research for a medicine to go from being just a chemical to becoming a new medicine.**

## Some of the Different Jobs in Making a Medicine

- **Medical Doctor:** understands about diseases and how to diagnose and treat them
- **Pharmacist:** understand all about the different medicines used to treat different diseases and making sure patients take them correctly
- **Delivery Driver:** Delivers the medicines made in the factory to the pharmacies so it can be given to the patients that need it
- **Chemical Engineer:** Runs the factory that makes different medicines
- **Manufacturing Scientist:** Testing the medicines made in the factory to ensure that they are good and work properly
- **Medical Scientists & Pharmaceutical Doctors:** Design and conduct the tests to show that medicines are safe and do what we want them to do
- **Research Scientist:** Works in the laboratory to check that the medicines work in the laboratory before they can be given to humans
- **Discovery Scientist:** Works in the laboratory and elsewhere to find chemicals and plants that can be made into medicines
- **Data Scientist:** Works with computers to help find which chemicals will make the best medicines.

# Questions....



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