

# Future Scientist Activity Pack (K-Year 2)

TCM4

Br2



CHILDREN'S  
MEDICAL  
RESEARCH  
INSTITUTE

Jeans  
for Genes®

Finding cures for  
children's genetic diseases

# What you and your school can do to help!

Jeans for Genes was created to raise money to help the scientists at Children's Medical Research Institute find treatments and cures for the 1 in 20 kids facing a birth defect or genetic disease.

**You may think you don't know anyone with a genetic disease or birth defect, when in fact – there is one in every classroom across Australia!** There are conditions that you may not be aware of, but also more commonly known conditions like cystic fibrosis, autism and cancer.

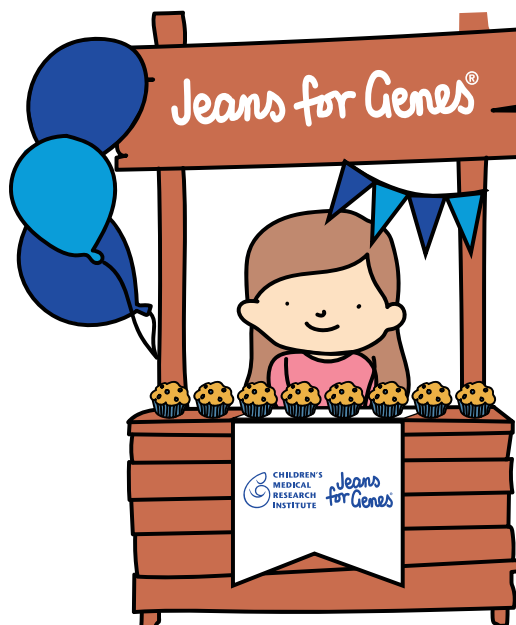


You and your school can help make a difference in the lives of kids who shouldn't have to think about getting liver transplants, taking dozens of medications, or getting their next dose of chemotherapy. We believe all kids should have a chance to just be kids!

Jeans for Genes is formally the first Friday in August but you can fundraise any time during August!

There are lots of fun things you can do to raise money—from holding a denim mufti day or trivia session to selling blue baked treats. We have some great decorations on our website to liven up your space!

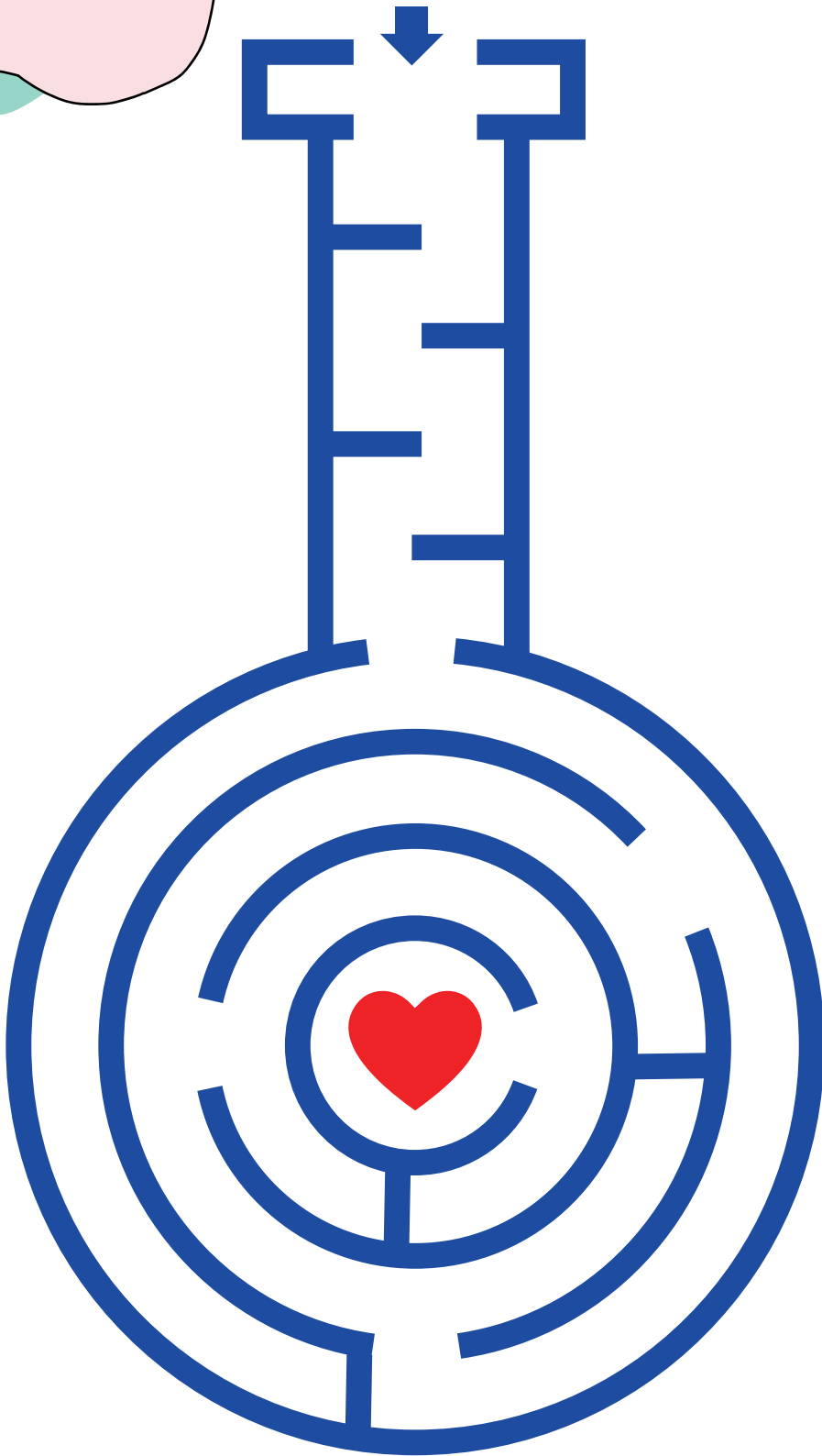
Find out more at [JeansForGenes.org.au](http://JeansForGenes.org.au) or get in contact with our team at [info@jeansforgenes.org.au](mailto:info@jeansforgenes.org.au)





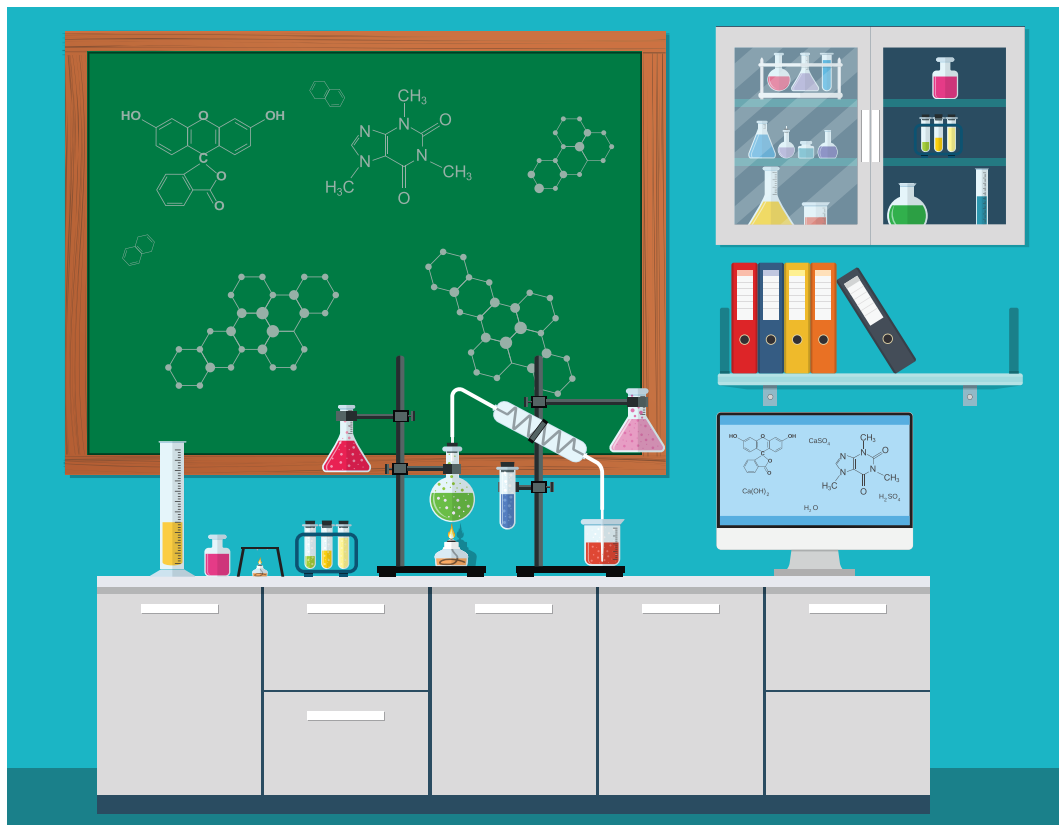
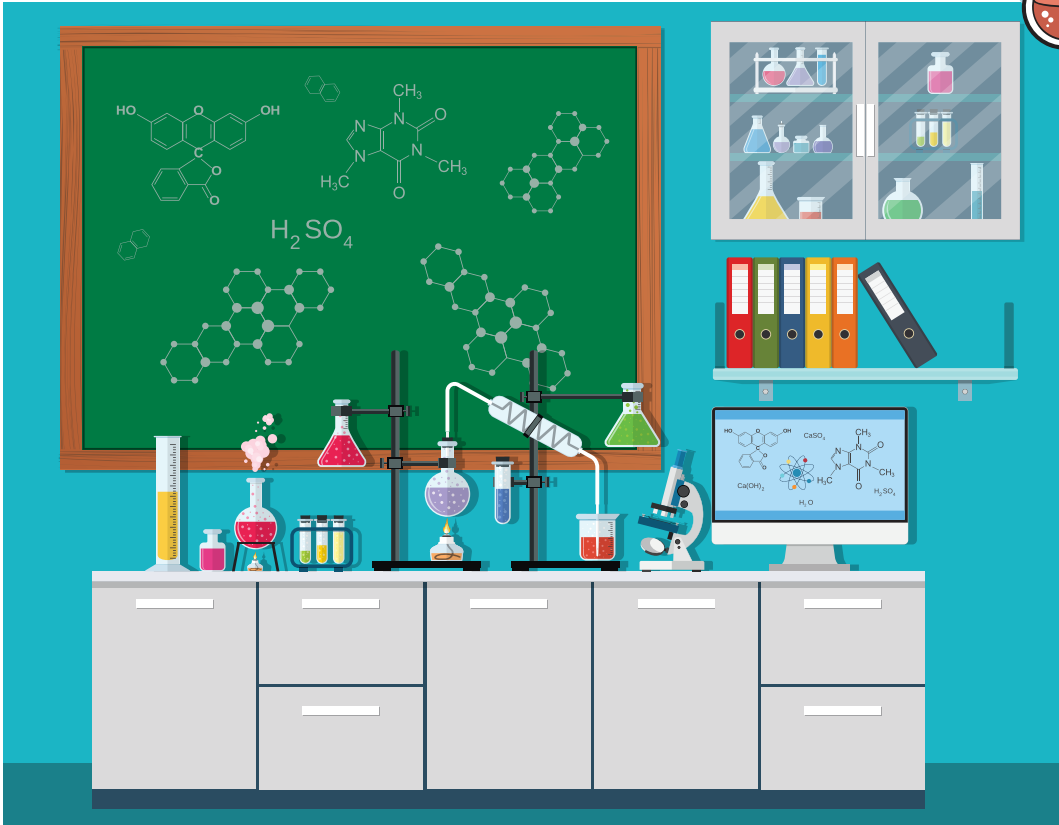
# Maze

Help Sophie get better. Find her cure in the flask below.



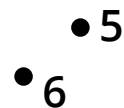
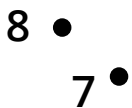
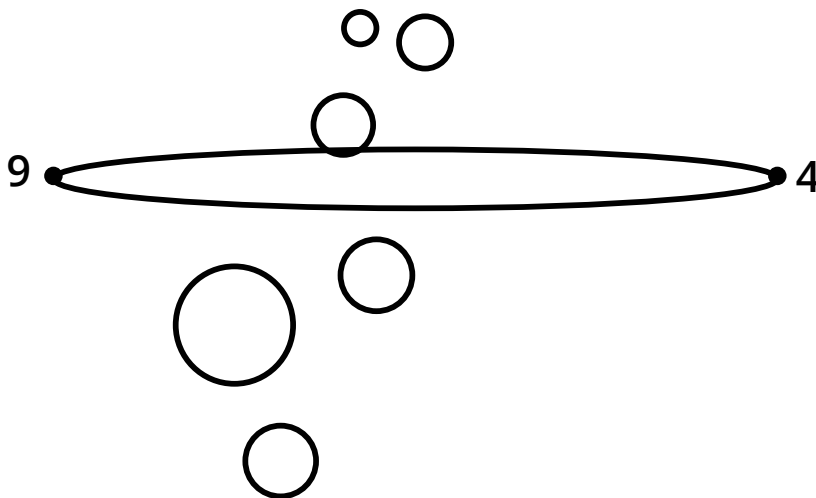
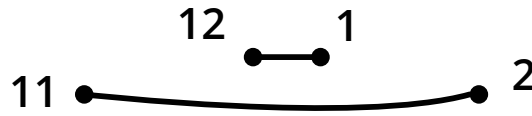
# Spot the difference

Help Timmy sort out his lab.  
Can you find all 11 differences?



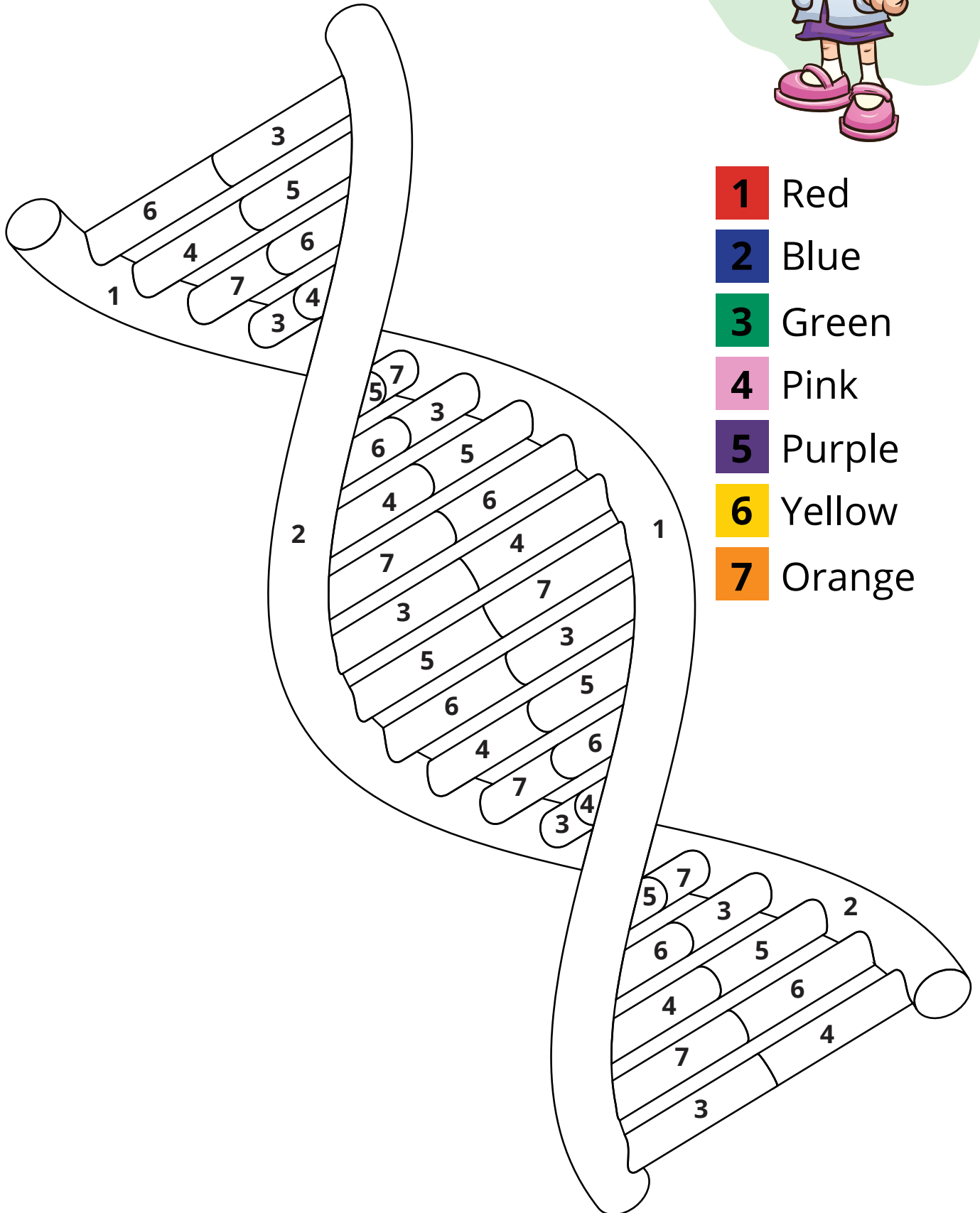
# Join the dots

Alvin has a vital new instrument. Can you join the dots to find out what it is?



# Colour by numbers

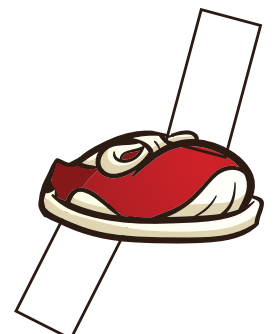
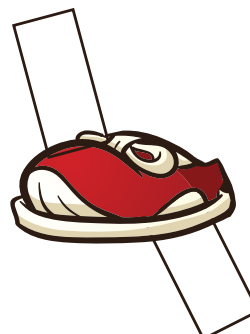
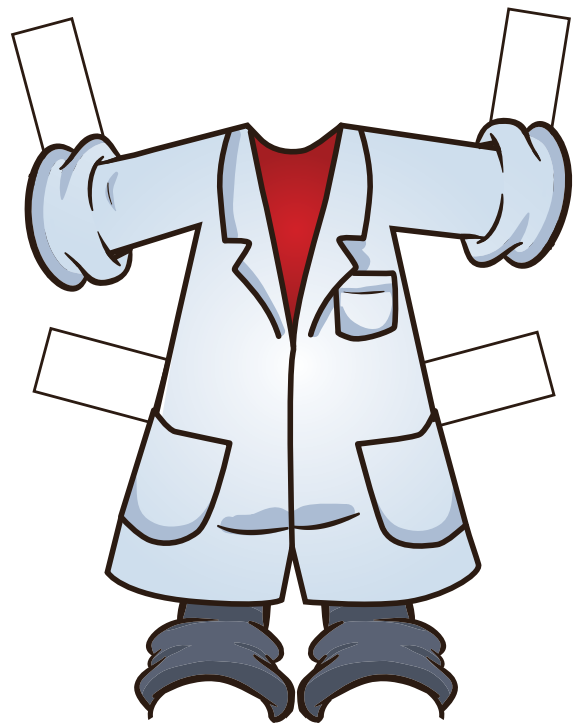
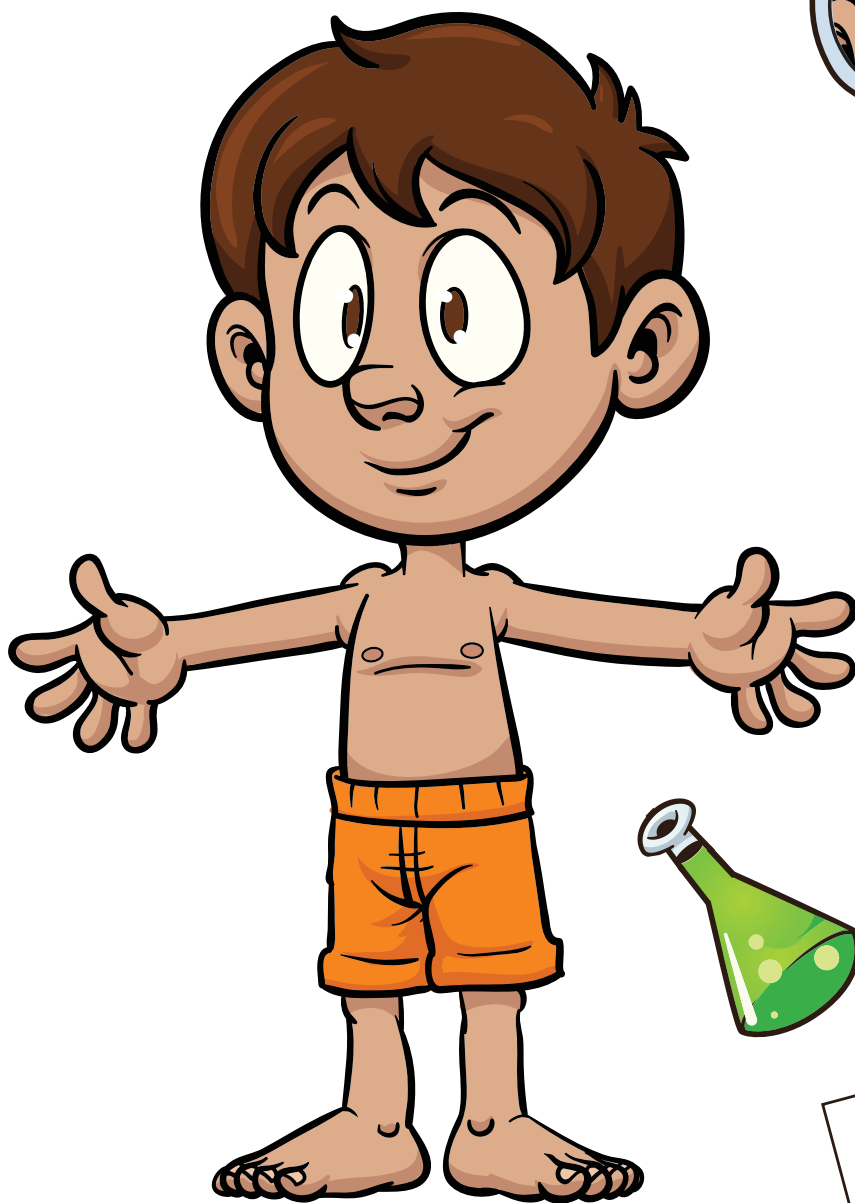
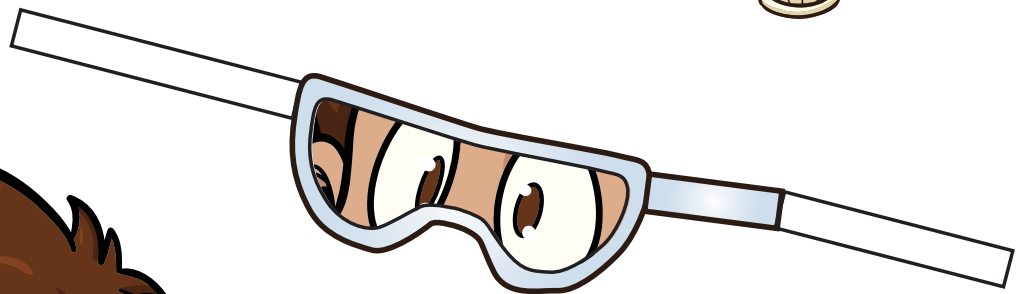
Can you help Katie colour her DNA?



- 1** Red
- 2** Blue
- 3** Green
- 4** Pink
- 5** Purple
- 6** Yellow
- 7** Orange

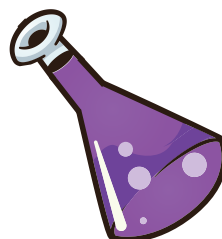
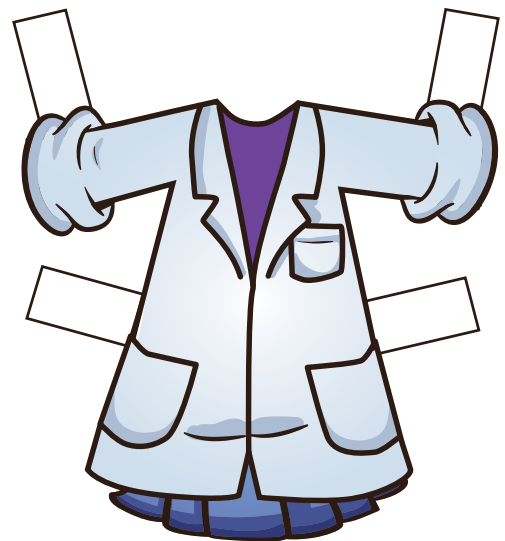
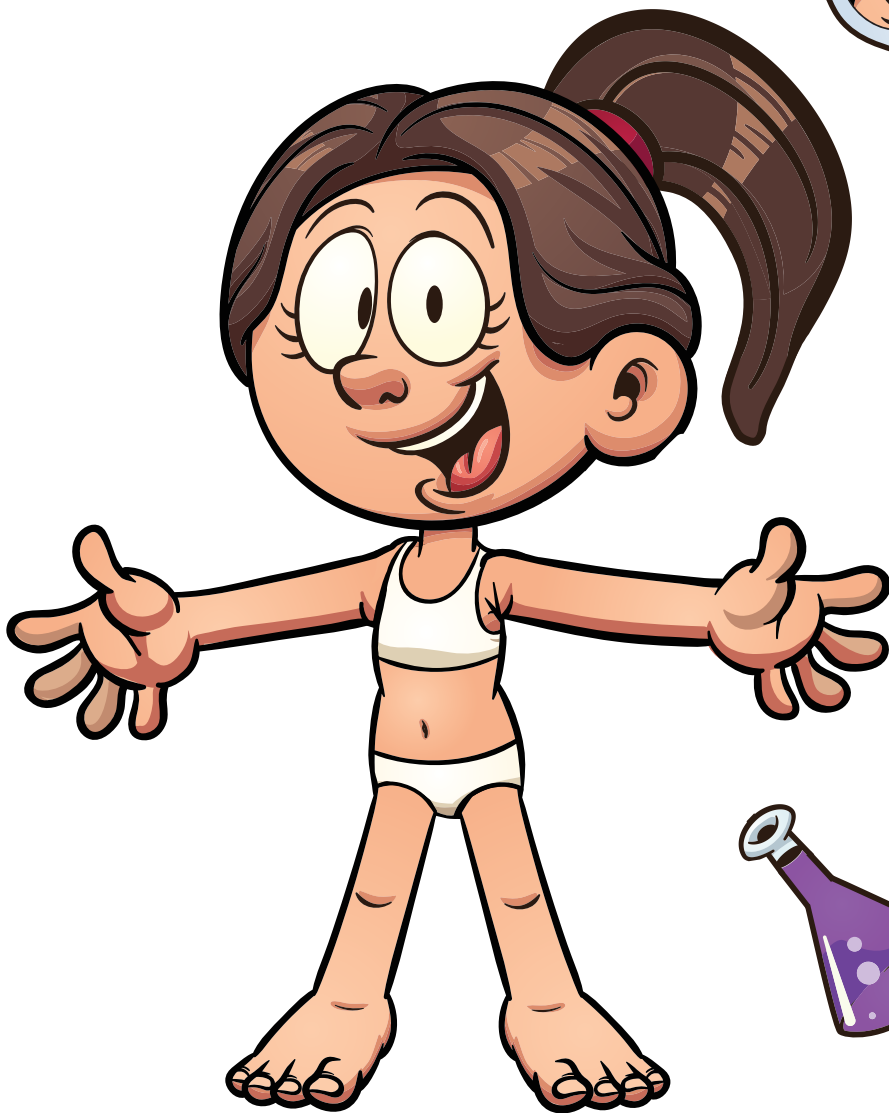
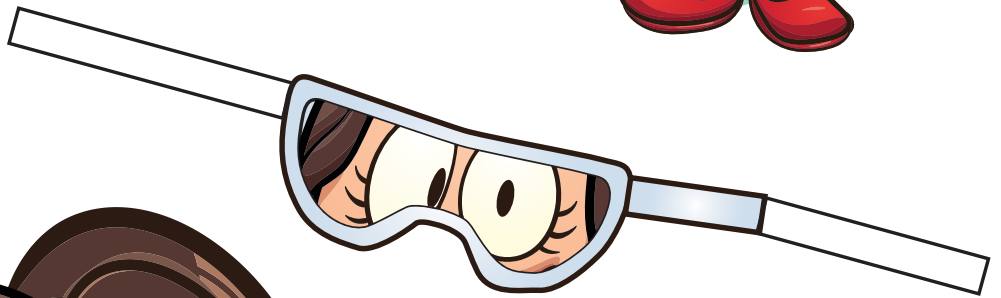
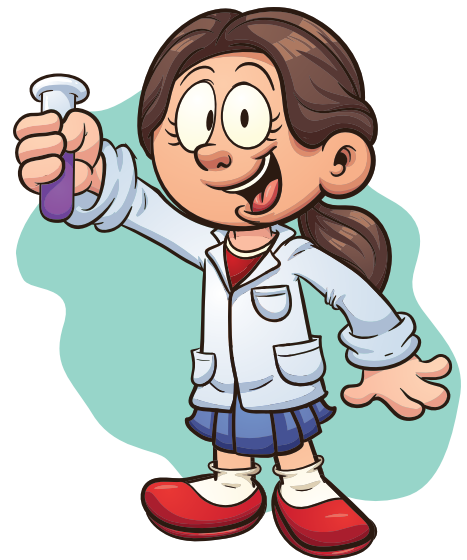
# Future Scientist - cut out doll

Can you help Gary  
get ready to do some  
research in the lab?



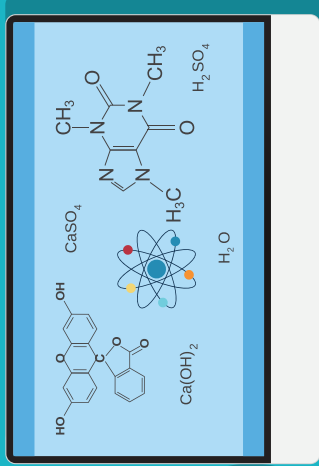
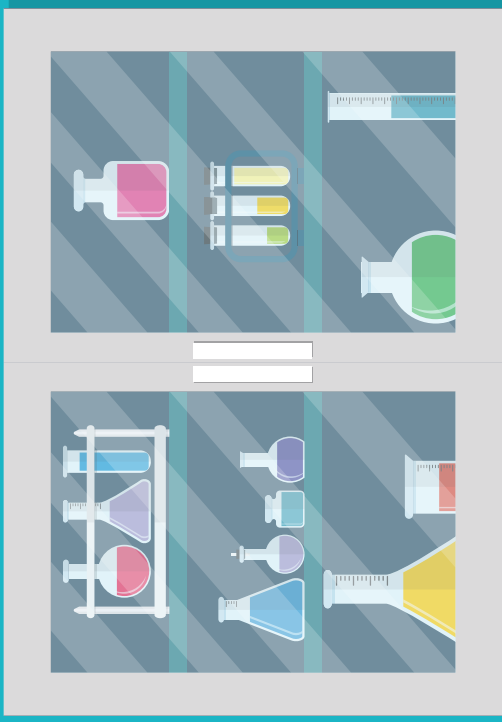
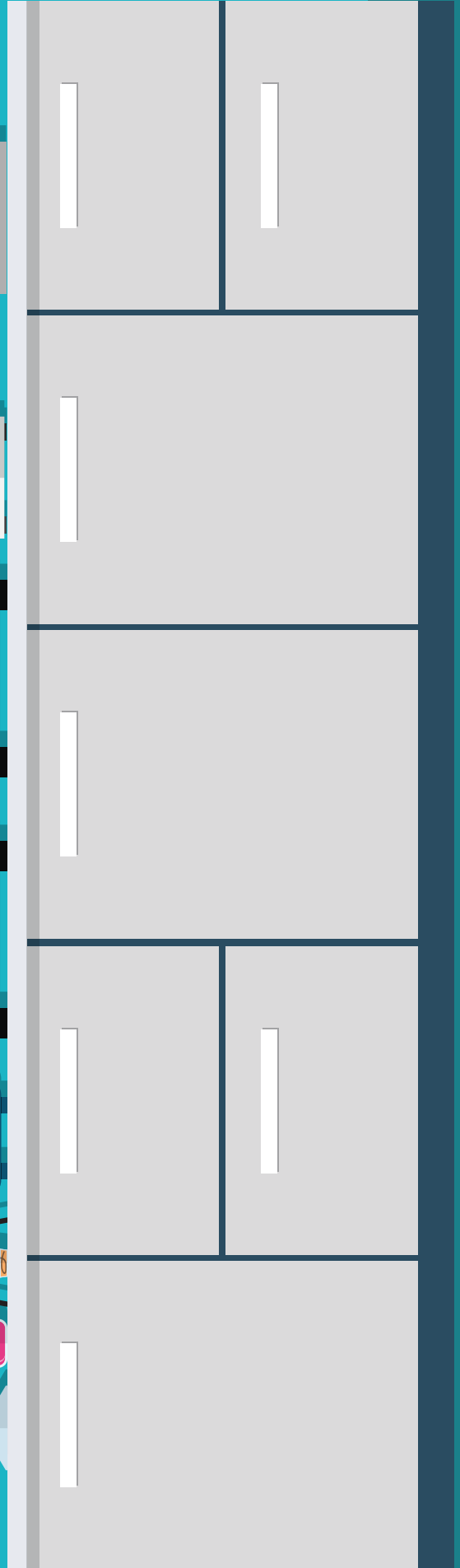
# Future Scientist - cut out doll

Can you help Zoey  
get ready to do some  
research in the lab?





# My Lab

A laboratory workstation featuring a green chalkboard with chemical structures and formulas. The chalkboard displays the structure of caffeine, the formula  $\text{H}_2\text{SO}_4$ , and the structure of a flavonoid. To the right of the chalkboard is a laboratory setup with a round-bottom flask on a stand, a condenser, and a test tube. A Bunsen burner is heating the flask. To the left of the chalkboard is a microscope. In the foreground, there is a rack of test tubes with yellow and green liquids, a beaker with pink liquid, and a flask with green liquid.

# Understanding Genes— Genetic Traits

Can you roll  
your Tongue?



How are your  
earlobes attached?



Have you got a  
hitch-hikers thumb?



What kind of  
hair-line do you have?



What other traits do you have? Think about...

- Eye colour
- Hair colour
- Curly, straight, or wavy hair
- Freckles
- Nose shape
- Dimples
- How tall you are
- Your skin colour

Write them down:

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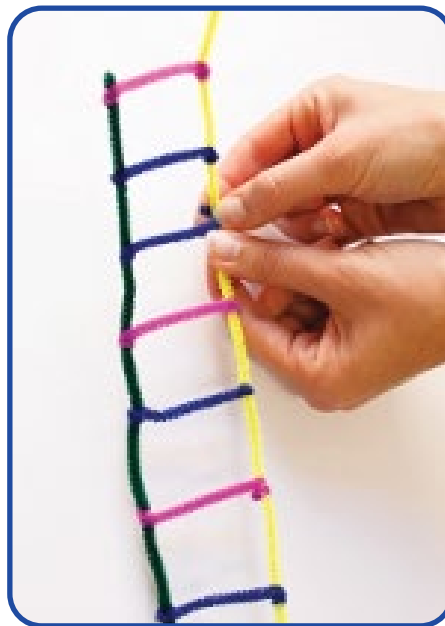
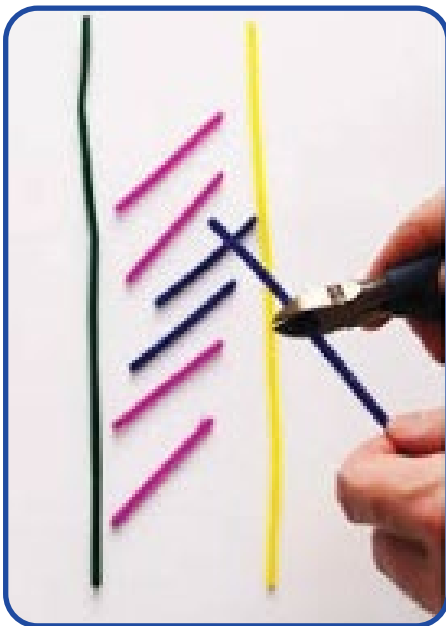
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# Build DNA using pipe cleaners

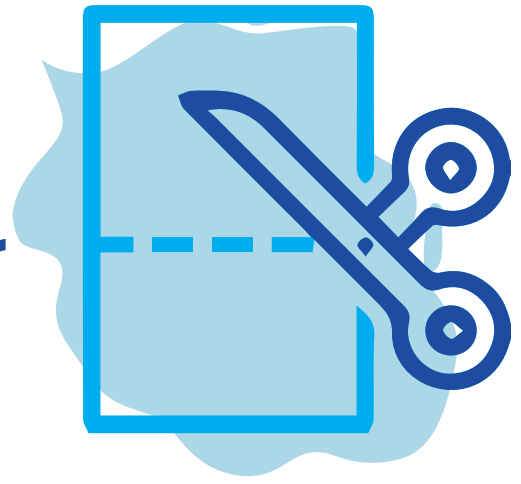
## This experiment requires:

- Set of pipe cleaners (different colours)



- 1.** Use 2 long pipe cleaners for the sides of the 'ladder'.
- 2.** Cut 3cm long segments from other pipe cleaners until you have 6 or 7 segments (ideally of different colours)—wind together to look like the above images.
- 3.** Then twist into a spiral staircase. This is what your DNA looks like!
- 4.** Each rung on the ladder is a letter in the genetic code. Your actual DNA contains trillions of letters, and carries the instructions for making your entire body.

# Create different body parts with your rainbow paper

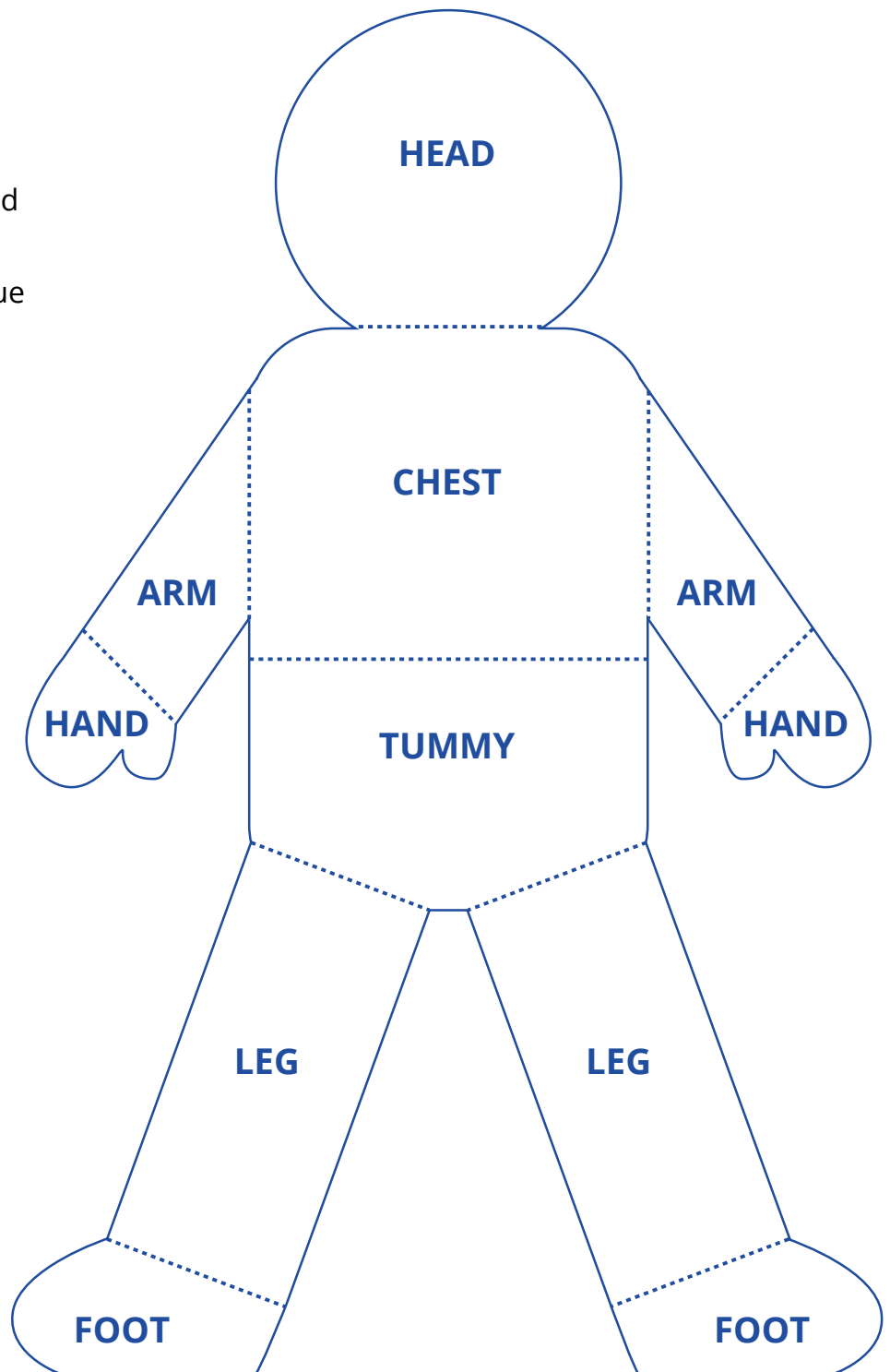


## This experiment requires:

- Coloured paper (multiple colours)

Cut out different body parts in different coloured paper. Do different coloured eyes, hair, different sized lips and eyes and ears and noses...

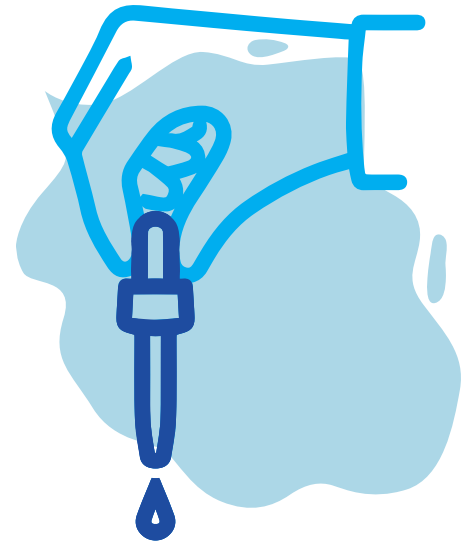
Use these parts to create unique people. You'll see that no two people are the same, just like real life!



# Fine Motor Pipetting practice

This experiment requires:

- Conical tube (or smaller container)
- Squeezy pipette
- Culture plate
- Plastic beaker (or container)



This is available as a kit at [shop.cmri.org.au](http://shop.cmri.org.au) (while stocks last)

Get food colouring and dye some water. Kids can practice moving water from conical tube or beaker to culture plates using pipette only—no spilling!

Wear gloves for added difficulty in your practice.

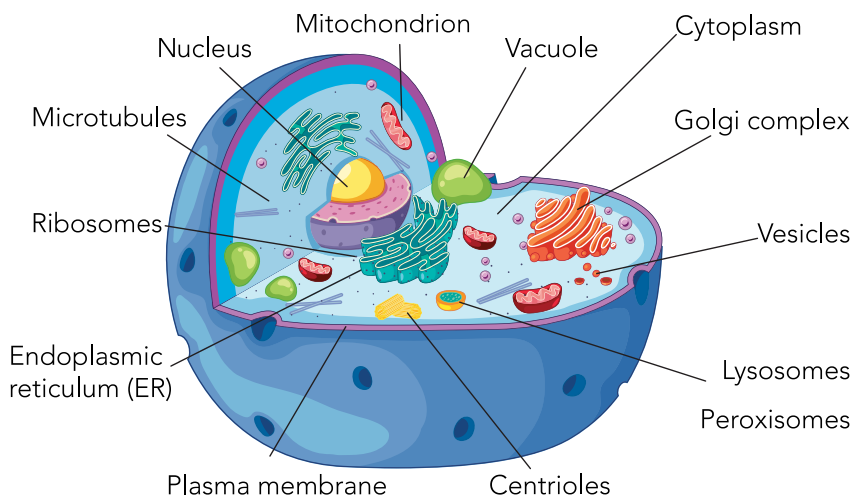
See if you can draw a picture in your culture plate.



# Craft Cells

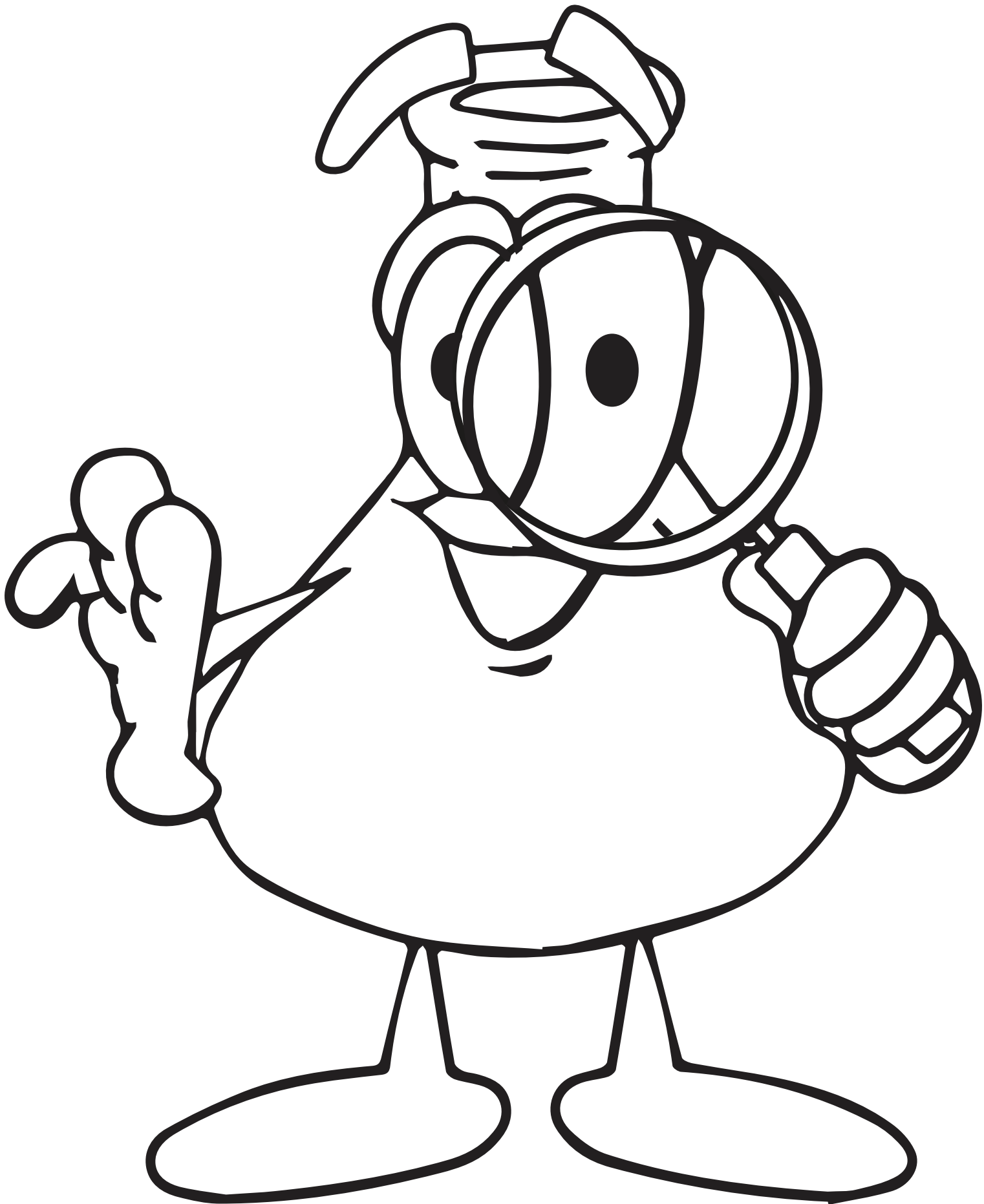
## This experiment requires:

- Modelling clay (multiple colours)
- Pom poms (ideally red, blue and green)

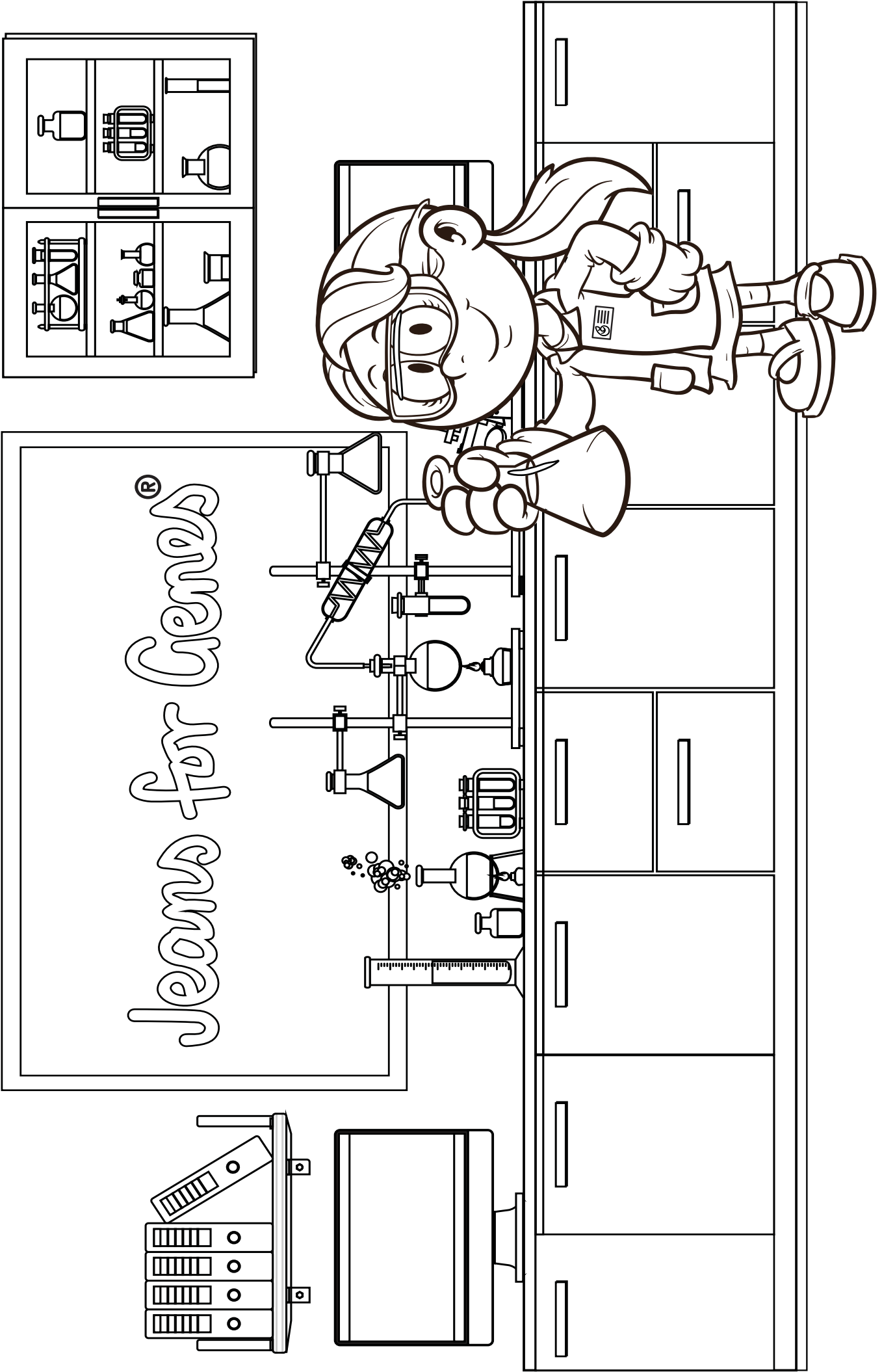


- 1.** Create a flat circle of modelling clay.
- 2.** Attach blue pom-pom for the nucleus in the centre (this is where the DNA lives, the instruction manual for the cell).
- 3.** Use red pom-poms for ribosomes (the construction centres of cells), green for mitochondria (the energy source of cells).
- 4.** If you want to craft your cell components out of modelling clay too, you can get more advanced like the pictures above (do a Google search to find out about each cell component).

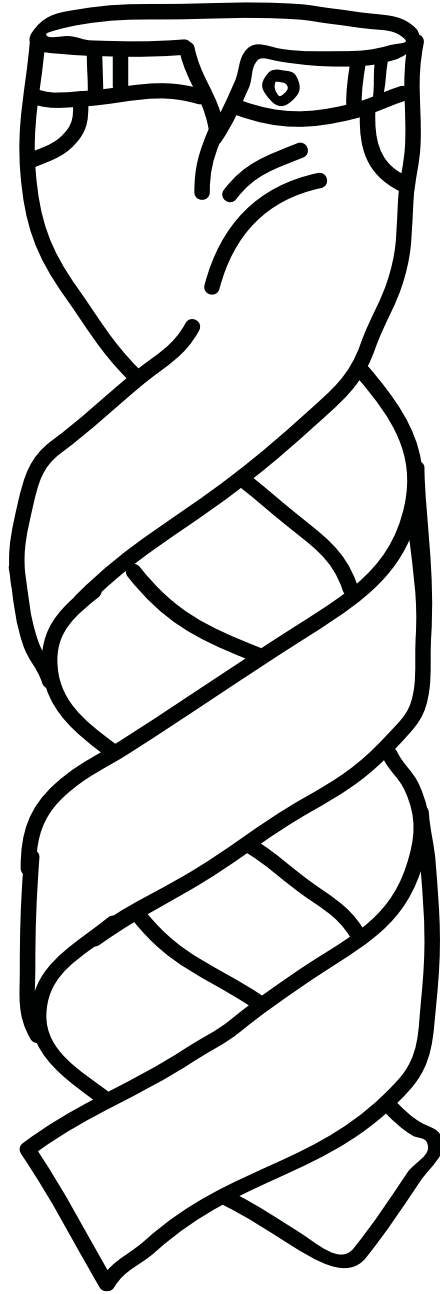
# Colour Me





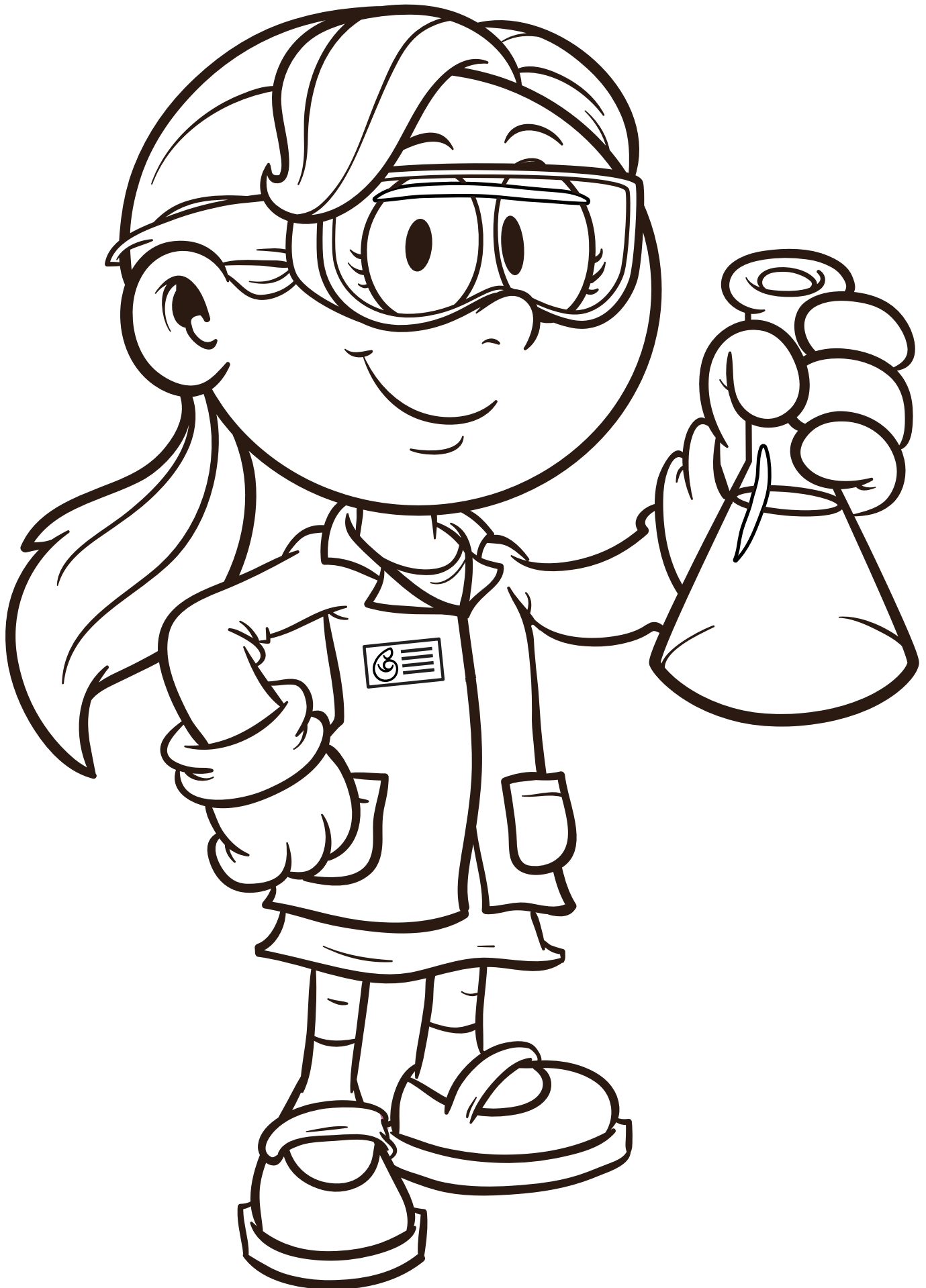


# Colour Me

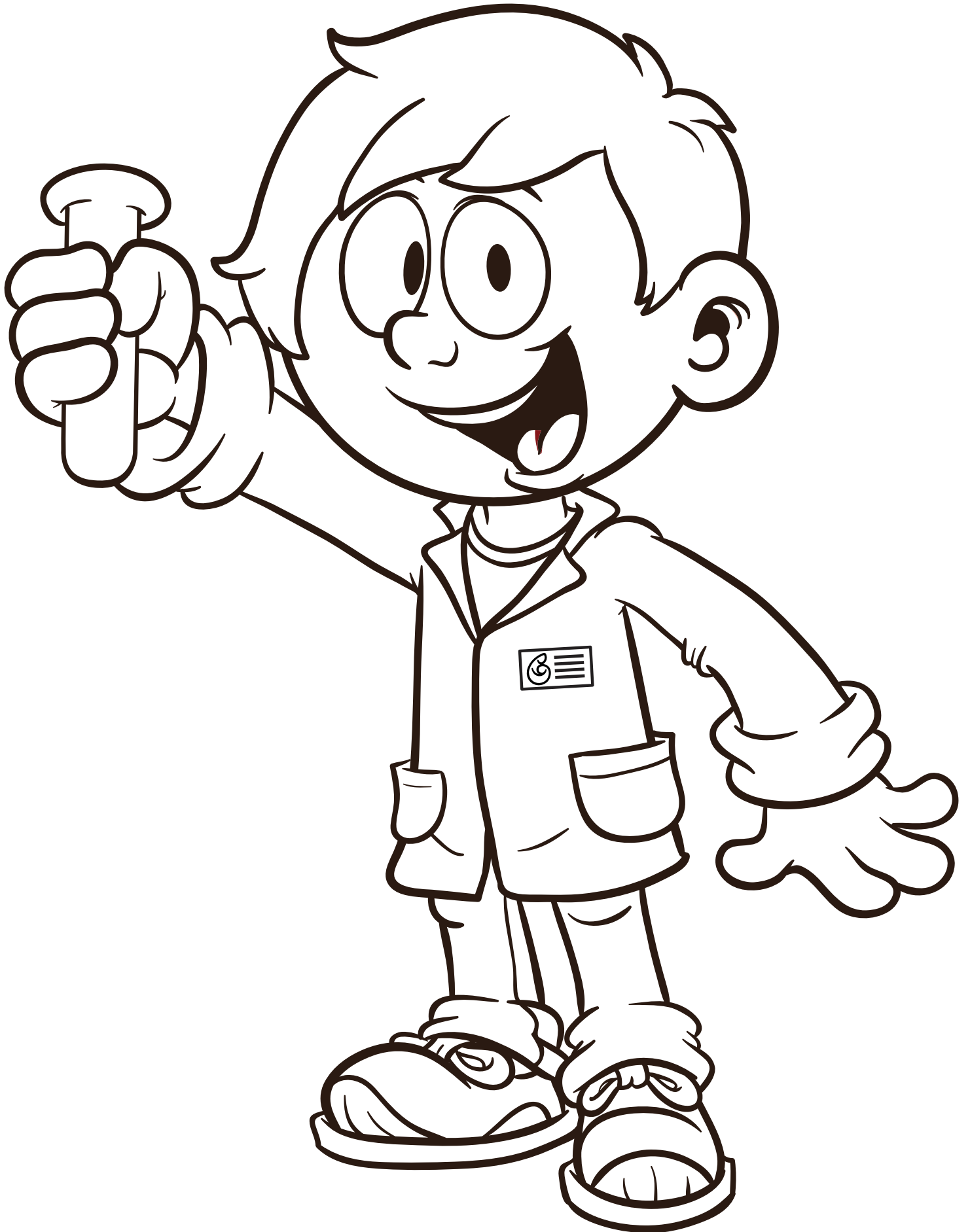


Jeans for Genes<sup>®</sup>

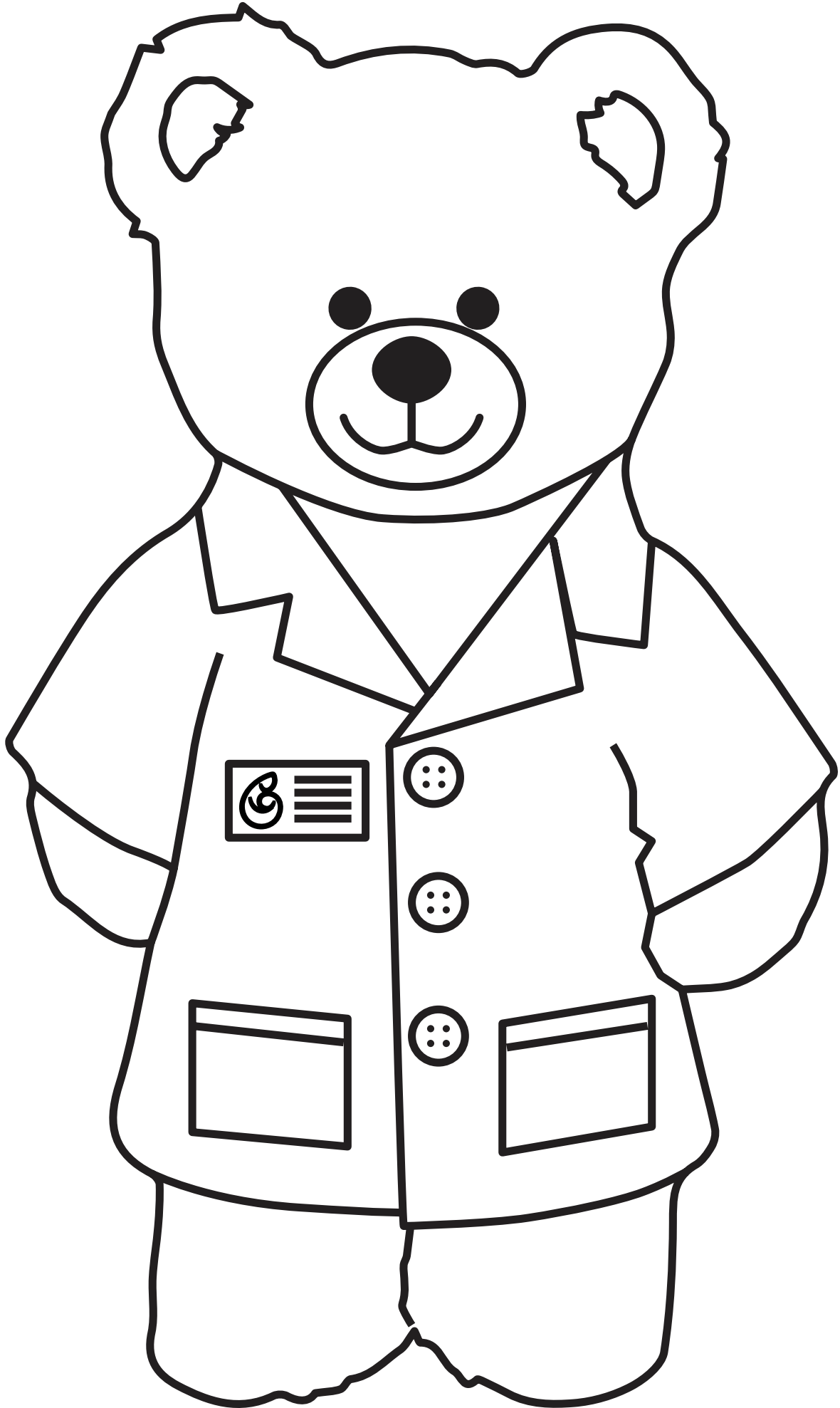
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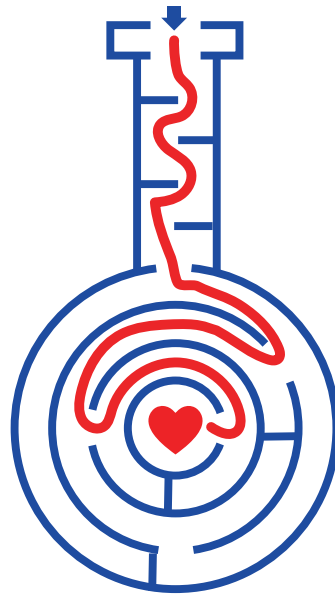


# Colour Me

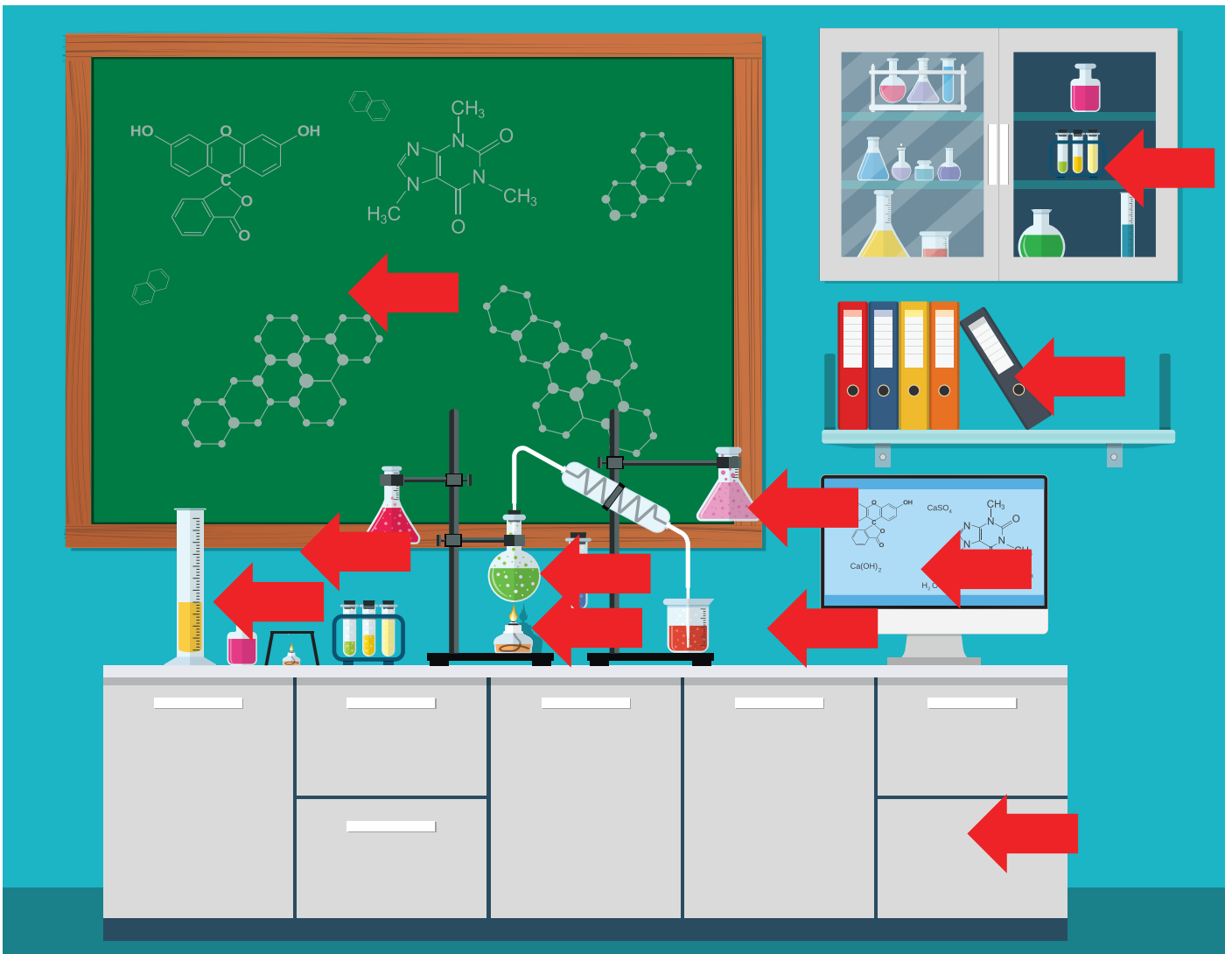


# Answers

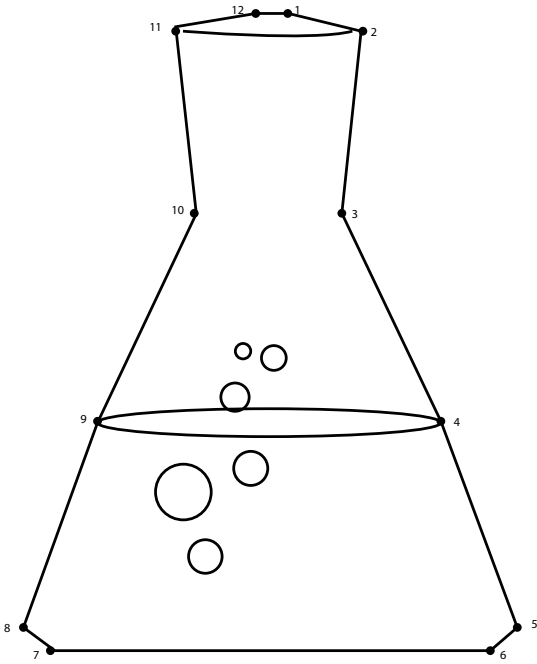
## Maze



## Spot the difference



## Join the dots



## Colour by numbers



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children's genetic diseases