

## SRC Week 2: STEAM and Scientific Discoveries

Welcome back to week 2 of Summer Reading Club! This week's theme is STEAM and Scientific Discoveries. Check out the fun activities below for adults and teens!

This week we have two fun activities for everyone to try!

1. Gather your materials and extract the DNA from a strawberry!
2. Read up on our introduction to fingerprints, and take an impression of your own.  
What type of fingerprint do you have?

Share your results with us at [summerreading@tnrd.ca](mailto:summerreading@tnrd.ca)!

### Strawberry DNA Activity

#### Supplies:

- Isopropyl alcohol
- Water
- Small glass container (2), medium glass container
- Spoon
- Dish soap
- Salt
- Strawberry
- Zipper-lock bag
- Strainer
- Tweezers



Image from  
<https://www.popularmechanics.com/science/health/a12884/a-recipe-for-extracting-raw-dna-15159362/>.

## Instructions

1. Place a bottle of isopropyl alcohol into the freezer for later use. Next, pour 90mL of water in a glass container.



2. Add 2stp (10mL) of dish soap to the water.



3. Stir in a  $\frac{1}{4}$  tsp of salt and mix until it dissolves.



4. Place one strawberry into a plastic zipper-lock bag.



5. Pour the extraction mixture into the bag with the strawberry.



6. Remove as much air from the bag as possible and ensure that it is properly sealed.



7. Using your fingers, squish the strawberry inside of the bag until there are no large pieces remaining.



8. Pour the strawberry mixture through a strainer and allow it to drip into a glass below. Use a spoon to help force more of the mixture through the strainer.



9. Transfer the liquid into a smaller glass container (roughly 50-100mL in size) to help isolate the DNA on the surface of the mixture.



10. Add 1 tsp (5mL) of the chilled isopropyl alcohol to the liquid and hold it up to eye level. The white layer on the top of the container is the DNA separating from the rest of the liquid!



11. Use tweezers to remove the DNA from the container and place it on a dish to examine.



Activity idea, images, and instructions from  
<https://www.stevespanglerscience.com/lab/experiments/strawberry-dna/>.

## Fingerprints: A Brief Overview

There are **three** different types of fingerprints: arches, loops, and whorls.

**Loops** are the most common. People with this type of fingerprint can even have double loops, where the ridges make a curvy 'S' shape.

**Whorls** are moderately common, and they are distinguished by their circular pattern

Finally, **arches** are the least common type of fingerprint, which have ridges that form a hill. Some can even look like the shape of a pointed tent!



loop



whorl



arch

Image from <https://www.thoughtco.com/why-do-we-have-fingerprints-373445>.

## Examine Your Own Fingerprint!

### You will need:

- A balloon
- A marker (preferably black)

### Instructions:

1. Color your thumb (or other finger) with your marker.
2. Press your finger onto the balloon.
3. Let it dry for about a minute.
4. Blow up the balloon enough to enlarge your print, but not so much that it becomes distorted!
5. What type of fingerprint do you have? Share your experience with us at [summerreading@tnrd.ca](mailto:summerreading@tnrd.ca)!