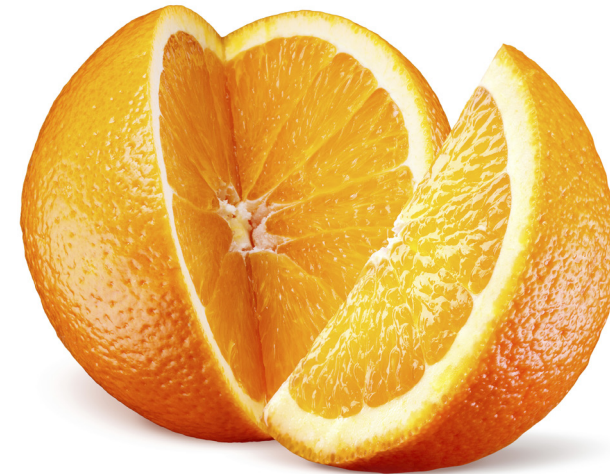


**WHAT MAKES
ME UNIQUE?**

PROMISE

SANFORD
RESEARCH

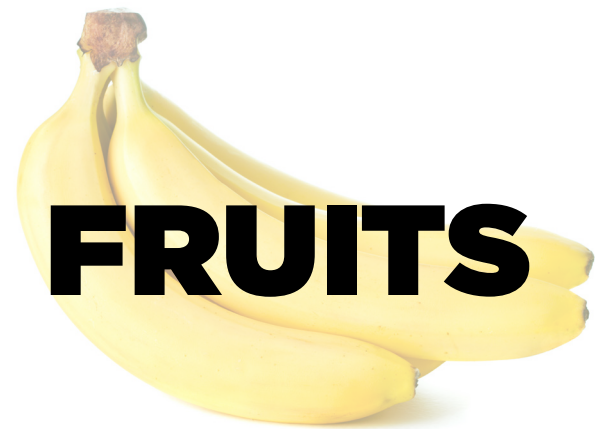
WHAT DO THESE HAVE IN COMMON?



FOOTAGE
AI
SCIENCE



WHAT DO THESE HAVE IN COMMON?



FRUITS



SEEDS



TASTY



EDIBLE



GROW

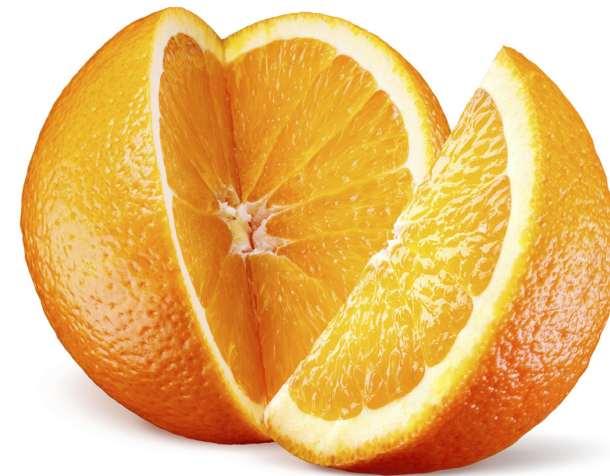


SWEET



NUTRITIOUS

WHAT IS DIFFERENT ABOUT THESE FRUITS?



WHAT IS DIFFERENT ABOUT THESE FRUITS?



LONG



SMOOTH



ROUND



RED



VINE



GREEN



ROUGH

PARTNER DISCUSSION



Look at your lab partner. How are you the same? How are you different?

TOTALLY
AMAZING
SCIENCE

WHAT MAKES YOU YOU??

KIND

BLONDE

QUIET

RELIABLE

FUNNY

FRECKLES

SILLY

STRONG



CURLY



TALL

LOVING

CARING

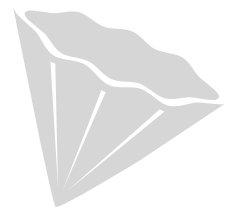
SMART

SHORT

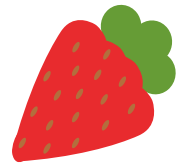
LOYAL



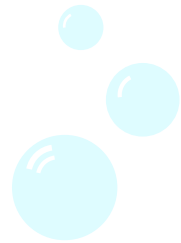
EXPERIMENT TIME!



Coffee Filter



Strawberry



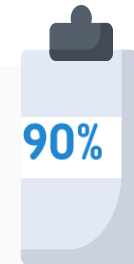
**1 tsp
Dish Soap,
Hand Soap,
or Shampoo**



**Stir
Stick**



**Sealable
Bag**



**¼ Cup
Ice Cold
Rubbing
Alcohol**



Funnel



**½ tsp
Salt**



**¼ Cup Wa-
ter**



**2 Plastic
Cups**

1. Gather the materials above.
2. Put the strawberry in the plastic bag and gently smash the strawberry until it is crushed.
3. Add the extraction buffer to the plastic bag with the strawberries. This will break down the cells even more.

EXPERIMENT TIME!

4. Reseal the bag. Make sure it is fully sealed! Gently massage the strawberry liquid. Try not to make too many bubbles.
5. Place a coffee filter on top of a funnel and put the funnel into the other cup. Have a partner hold the filter in place as you pour the strawberry mixture in. Be sure it does not overflow.
6. Allow the strawberry juice to run into the cup. Twist the top of the filter just above the juice and gently squeeze the remaining liquid into the cup.

EXPERIMENT TIME!

7. Remove the filter. Pour $\frac{1}{4}$ cup ice cold rubbing alcohol down the side of the cup. **Do not mix!** You have isolated DNA from the cell. It will slowly start to precipitate.
8. Watch for a white cloudy substance to form in the alcohol layer. This is DNA.
9. Using a coffee stirrer, slowly stir the top layer. Pull out the DNA!

Name: _____

PROMISE

SANFORD
RESEARCH

WHAT MAKES ME UNIQUE?

Fill out the questions below as you progress through the What Makes Me Unique? lesson and slideshow.

1. Look at the images on the slideshow. What do they have in common? What is different about them?

2. What happened when you combined the strawberry mixture with the cold alcohol?

3. Describe the DNA. What does it look like? What does it do? What is its function?

Answer the questions in your lab book and discuss your answers with a partner.

DNA MAKES US UNIQUE

- DNA is found in all of our cells and the cells of all living things!
- We have our version of DNA that makes us unique.
- Members of the same species (humans) have very similar DNA - except for a few small differences.
- We are more alike than we are different!



PHYSICAL VS PERSONALITY

DNA is what makes **physical** traits. The DNA tells our cells what traits we will have!

PHYSICAL

- Hair color
- Skin color
- Eye color and shape
- Hair texture
- Height
- Nose shape
- Ear shape

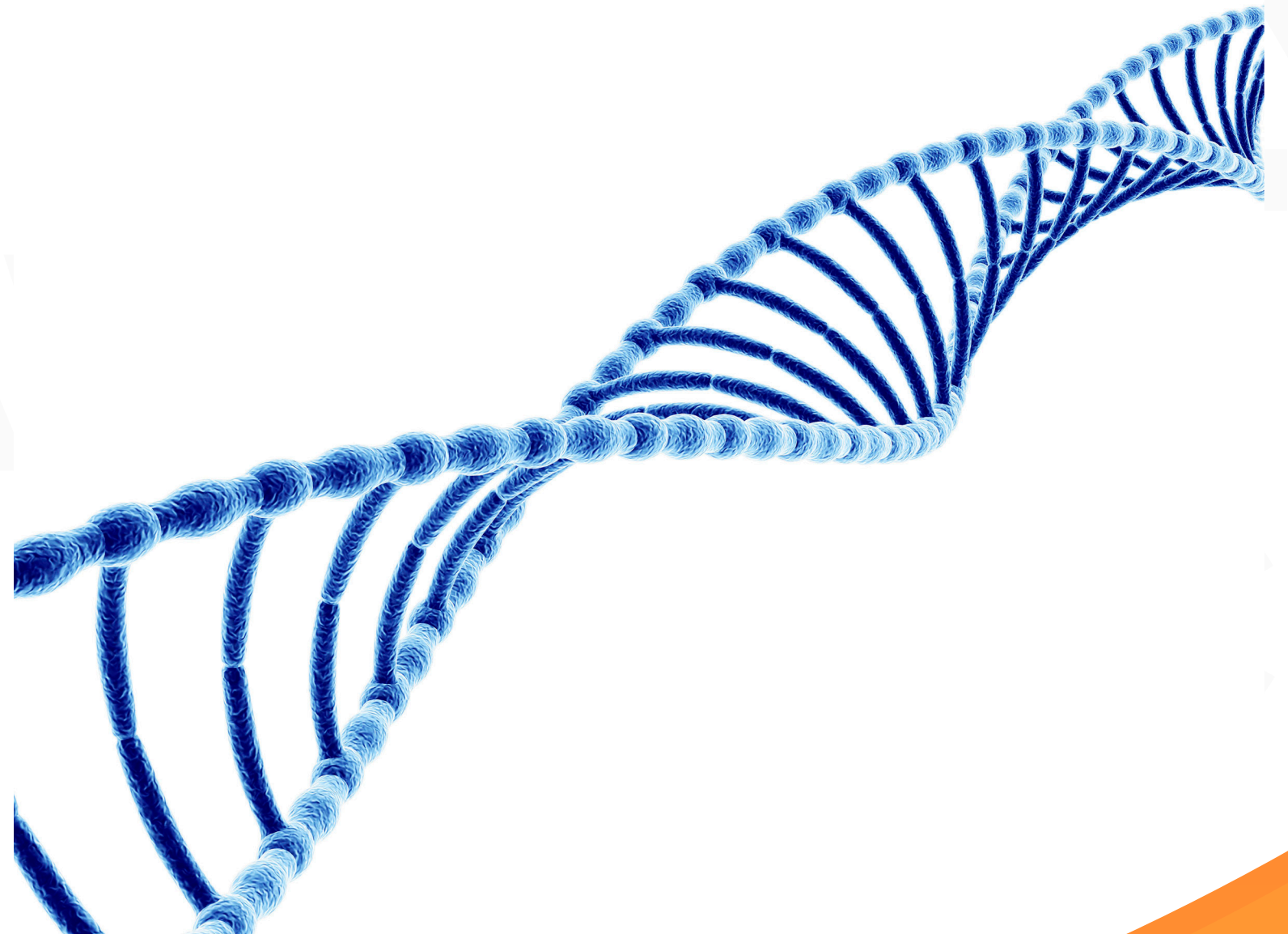
PERSONALITY

- Funny
- Serious
- Independent
- Friendly
- Determined
- Silly
- Smart

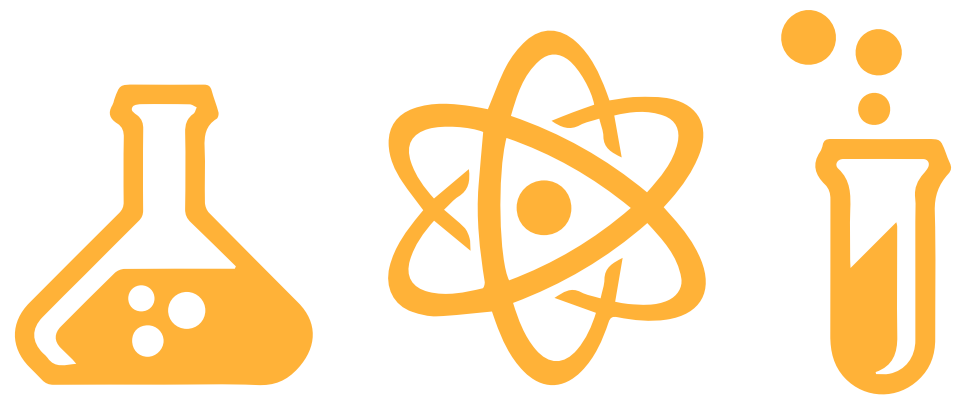
WHAT DOES DNA LOOK LIKE?

You have 2 copies of DNA to make you your physical traits.

Strawberries have 8 copies - That's why it's easy to see! If we look very closely here's what we'd see!



ANSWER THE REMAINING QUESTIONS IN YOUR LAB NOTEBOOK!



4. Write at least three things you learned about DNA and what makes you unique.



Here's what I did today!

I visited the virtual Sanford Research PROMISE lab to learn about my DNA. Many things make me different. In a lab experiment, I extracted strawberry DNA.