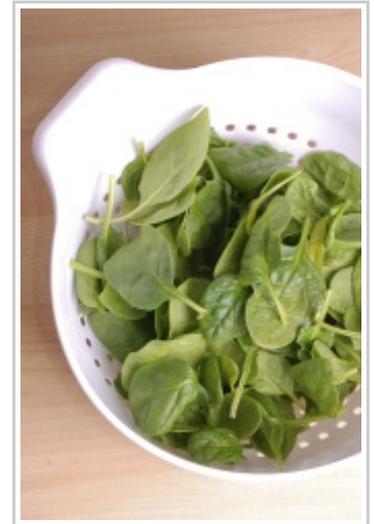


Extract DNA from Spinach!

Did you know that you can extract DNA from any living thing from the comfort of your family's own kitchen? DNA is the genetic coding that determines that a human embryo will become a man, a bird embryo will become a robin, etc. Show your child how a quick whirl of spinach in the blender will reveal this cobwebby "stuff" of life! So go ahead—play with food! This food experiment will have her so captivated that she won't even realize she's learning life science.



What You Need:

- Rubbing alcohol
- Blender
- Timer
- 1/2 cup fresh spinach
- 2 tablespoons dish washing soap
- Pinch of meat tenderizer
- Strainer
- 1 cup cold water
- 1/4 teaspoon salt
- Clear glass measuring cup

What You Do:

1. Have your child blend the water, salt, and spinach together in the blender at a high speed until she has created a "soupy" mixture.
2. Help her pour the concoction through a strainer into the glass measuring cup. Ask her to add the dish washing soap and set a timer for ten minutes.
3. Invite your child to add a pinch of meat tenderizer to the mixture; she should combine it slowly and completely.
4. Observe and discuss the present state of the mixture. How much volume is in the cup now? Have your child very carefully add exactly that amount of rubbing alcohol.
5. Ask your child to set the timer for three minutes. What does she see in the cup? If there is a white cobwebby substance, that's DNA! You will also notice that the mixture becomes somewhat murky.

What's going on? What made the DNA appear? By completely blending the spinach, your child broke the substance down to its simplest cellular structure. The soap helped to further access the DNA, and the alcohol made the strands adhere to each other. Voilà! Feel free to preserve the DNA "soup" as long as your child would like!

Please Note: This activity could make for a great jumping off point for a science fair activity, however, it's more of a basic science activity to do for fun, than it is a study in the scientific method.

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