



Teacher's Guide for:

DNA

Note: All activities in this document should be performed with adult supervision. Likewise, common sense and care are essential to the conduct of any and all activities, whether described in this document or otherwise. Parents or guardians should supervise children. Rock-it Science assumes no responsibility for any injuries or damages arising from any activities.

NOTE: This is the transcript of a lesson that was videotaped during an actual Rock-it Science class with real students, not actors. The students' brainstorming comments are included on the video but are not transcribed here because they're not part of the lesson presentation.

Contents:

Quick Reference Sheets:

- Intro:page 2
- Experiment: *DNA Extraction*page 3
- Equipment List: *DNA*page 5
- Story, Part 1: *The Invisible Minion Heist*page 6
- Story, Ending.page 7

Video Transcript:

- Intro:page 8
- Story, Part 1 : *The Invisible Minion Heist*.page 10
- Experiment: *DNA Extraction*page 13
- Story Endingpage 17

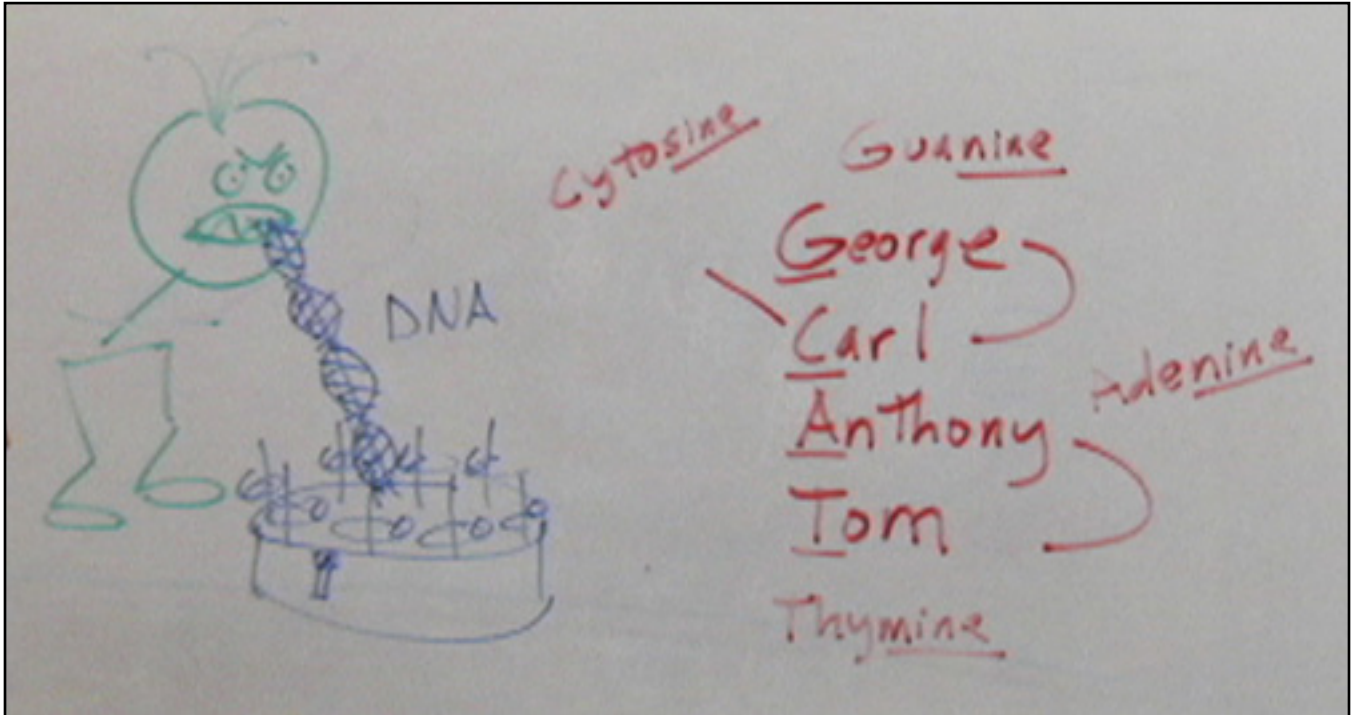
Title Page of Video

DNA
A Rock-it Science Lesson
Filmed November, 2009

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Intro Quick Recap:



- There are clouds over the Urf. Clouds have negative charge at the bottom and some positives at the top.
- On the ground or the ocean, there'll be a positive charge wherever a cloud passes by.
- If the ocean is perfectly flat, water just evaporates and makes clouds.
- If there are breaking waves, they create tiny droplets that also have positive charge.
- Positives hate positives, so the droplets start going upwards because they're attracted to the negative charges on the clouds.
- On the way up, they might evaporate, and when they get to the cloud, they help decrease some of the negative charge. They also feed the cloud with water vapor.
- Boiling water is different. When you put a cup of water over heat, the cup gets hot and conducts heat to the water.
- The water closest to the cup gets hot first, and the molecules get all jiggly, so they bang into the other molecules and make them get hot.
- If you get it hot enough at the bottom, the water turns into a bubble of steam (not an air bubble).
- The bubbles start big, then get smaller and smaller as they rise.
- When it becomes a full rolling boil, the bubbles escape all the way to the top.

Experiment Quick Recap: "DNA"

- Instructor demonstrates the entire procedure before students do it.
- On the internet, there are many recipes for getting DNA out of fruit. Some of them are very complex, but the one we're using only requires a few ingredients: soap, salt, water, fruit, and alcohol.
- The alcohol has to be very cold, so we have it sitting in a container on ice.
- The soap and salt have been pre-mixed into the water.
- Instructor brings out some strawberries that had been frozen and are now very soggy. He puts a couple in a ziplock bag and adds a tablespoon of the soap-salt-water mixture.
- Lay the bag on the table and squeeze the air out, then zip it so it's securely closed. Position the strawberries in the middle.
- Press on the fruit with the palm of your hand a few times to squish it. then pick up the bag and squish it between your fingers to get the soap solution and the fruit well mixed.
- Using your fingers works better than using a blender because the blender chops up the DNA into short strands so it doesn't work as well.
- The water creates a place for the DNA to go, the soap breaks down the walls of the cells so the DNA ruptures through it, and the salt creates osmotic pressure so that the DNA wants to run out of the cells. The soap also helps keep it in solution so it doesn't run away.
- The strawberry pulp contains skin, leaves, dirt, etc. in addition to the juice, so it has to be filtered.
- Filter paper would get clogged right away. Instead, cut a square from a nylon sock and put it in the bottom of a large syringe to act as a filter.
- Cut one corner off the ziplock bag and squeeze the pulp through the hole and into the syringe. You should be able to fill it about half-full.
- Place a test tube into a test tube rack and hold the syringe just above it. Press down with the plunger to make the juice drip into the test tube.
- DO NOT rest the syringe on the test tube when you're pressing down, because the test tube will shatter and you'll get cut.
- When students get about a teaspoon of juice in the test tube, Instructor squirts in some icy alcohol, directing it towards the inner sides of the test tube to wash down any juice that may be clinging to the sides.



Squashing strawberries.



Forcing juice through syringe.

Experiment Quick Recap (cont.): "DNA"

- The DNA will begin to separate almost immediately, being drawn up into the alcohol. It appears as a layer of milky fluid above the juice.
 - Let it just sit for awhile. Then use a cotton swab to pull out some of the DNA. It will be slimy. Put it in a plastic souffle cup.
 - While students are waiting for the strawberry DNA to finish separating, they can start on another fruit, such as bananas, grapes, onions, apples, or oranges. For apples and onions, the Instructor cuts a piece and chops it in a blender before giving it to the student, using a clean blender jar for each type of fruit. Bananas, grapes, and oranges don't need to be blended.
 - Before starting on the second fruit, students get a new ziplock bag and test tube. They empty out the syringe, then rinse the syringe, plunger, and nylon filter in a bucket of water before reusing them.
-

Equipment List: "DNA"

Items needed for Instructor:

Consumables:

- Alcohol, denatured
- Mister Bubbles soap
- Salt (plain table salt)
- Water
- Ice, crushed, 1 bag
- Pipette, plastic
- Paper towels for cleanup

Other:

- DNA models (2), one monochrome, the other multi-colored
- Bottle, plastic, for soap solution
- Bottle, plastic, for alcohol
- Measuring spoon, 1 tbsp
- Container to hold crushed ice
- Knife for cutting fruit
- Blender with 2 jars
- Bucket, 5-gal
- Cooler to store ice if necessary



Syringe and plunger.



Alcohol chilling on ice.

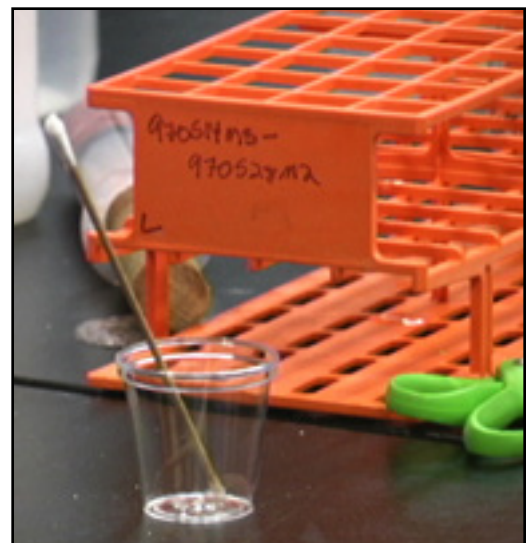
Items needed for Students:

Consumables (per group of 2 students):

- Strawberries (2)
- Fruit, other (banana, grapes, onions, apples, oranges)
- Ziplock bag, 1 qt size (2 per group)
- Cotton swab (2)
- Souffle cup, plastic, 2 oz (2)

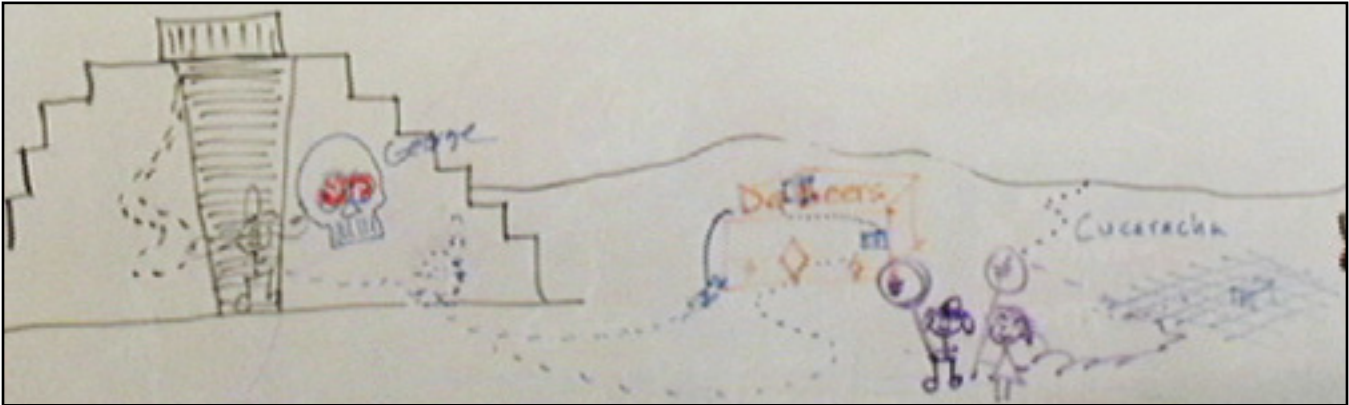
Other (per group of 2 students):

- Test tube, (2)
- Test tube rack
- Large syringe
- Nylon sock filter



Test tube rack, plastic cup, cotton swab.

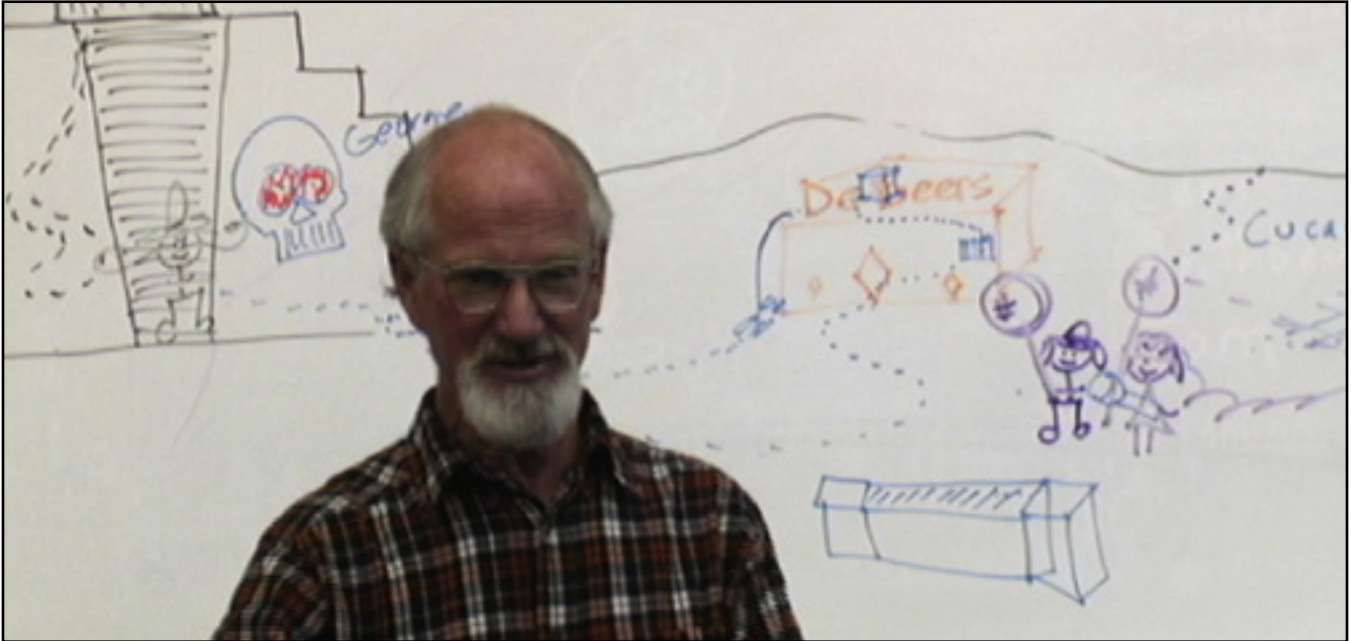
Story Recap: "The Invisible Minion Heist"



Part 1:

- Evil Mister Fred discovered a crystal skull deep inside a Mayan temple.
- The skull's name was George. George could be nice if he liked you, but he also had fire in his eyes.
- Evil Mister Fred wanted to find out what George could do if he got angry, so he told a minion to tell George he was ugly.
- Fire came out of George's eyes, and the minion got completely burned up.
- But a minute later, Evil Mister Fred felt a baseball bat hit him on the knee, but there was no one there. It turned out the minion had become invisible.
- Evil Mister Fred got all his minions to insult George so they could all become invisible.
- He sent them to the town of Cucaracha to rob a candy store because they love M&Ms. As they went through the town, the minions would hit people and make them think some one else had done it, so a lot of fights broke out.
- When they got to the candy store, the store owner saw the bags of M&Ms float into the air, open up, and then turn into a brown mush inside something he couldn't see. Then the clumps of brown mush floated out the door.
- When Evil Mister Fred realized that whatever the minions ate would be visible for awhile, he sent them to rob the DeBeers diamond store, because diamonds are clear and wouldn't be seen.
- The minions sneaked into the DeBeers store, past the security, and swallowed all the diamonds. But security locked down the building so no one could get out.
- The minions used their baseball bats to smash the grate leading to an air conditioning duct, crawled through it to the roof, smashed their way out at the top, and jumped off the roof, leaving footprints where they landed on the ground. Then they ran back to Evil Mister Fred.
- Evil Mister Fred was going to cut the minions open to get the diamonds, but then decided to put a vacuum cleaner hose down their throats and suck them out instead.
- DeBeers called Jack and Jill to solve the crime because they were famous detectives. They saw the smashed air conditioner opening and saw the dust in the duct had been moved. They recognized the minion footprints, but the footprints disappeared after they jumped off the roof.

Story Recap (cont.):



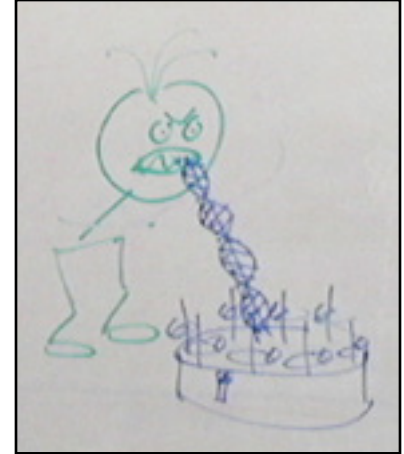
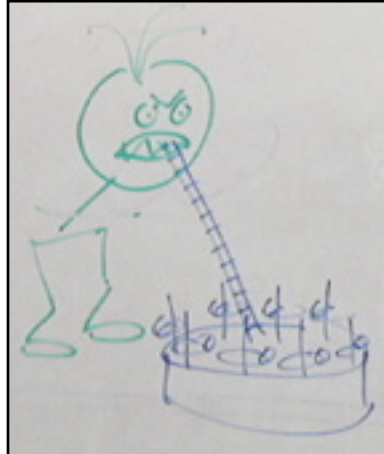
Ending:

- Jack and Jill searched all over the DeBeers building, but even the minion hair was invisible.
- So they brought in a special ultraviolet light, and they saw tiny hairs. They knew they had to be from the thieves because they were invisible.
- They collected the hairs, ground them up, and put them into the soapy liquid with a little bit of salt. They squeezed them through a filter, added alcohol, and collected the DNA.
- They had the DNA run through jello by giving it a five thousand volt electric shock. The little DNAs ran faster than the big DNAs, and they made stripes in the jello.
- Now Jack and Jill had the DNA fingerprints of the thieves.
- They went to Evil Mister Fred and wanted to see his minions, but Evil Mister Fred wouldn't tell them where they were.
- Then Jack felt something rush past him, and Jill saw footprints running around, so they knew the minions were there.
- Jack started spraying yellow spray paint around, so the minions became visible.
- Jack and Jill grabbed some hair from the minions' mustaches and did the DNA test again, and they found out the minions were the thieves.
- They called the police, who took Evil Mister Fred and the minions off to jail.

Transcript: Intro

Suppose a monster comes into your back yard, and suppose your parents had given you a merry-go-round. And your merry-go-round has horses on poles around the edges, and in the middle of your merry-go-round you put a ladder, because you like to go around and around circles in the sky. And the monster came and bit the end of your ladder, like that. And you said, "Hey, monster, let go of my ladder." And the monster said, "Mm-mmphhh!" [*shakes head*]. And you say, "You'd better do it or I'll turn on the merry-go-round and make your head spin." The monster said, "Rrrrrrr!"

So you went over there and you turned on your merry-go-round. And the merry-go-round starting going [*makes sounds like an engine trying to rev up*], and it was turning. And as it turned, the ladder started to twist, like that. And the rungs on the ladder got all distorted. Does that look like anything? [*Students: DNA!*] Yep, that's what DNA looks like.



Left: Monster bites ladder. Right: Ladder gets twisted.

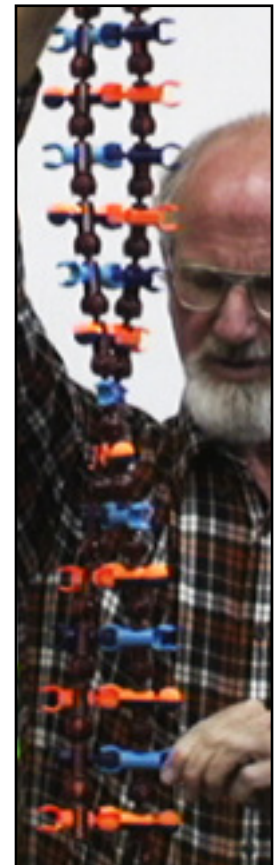


Twisted pairs.

It's kind of like a ladder that's been twisted by a giant green monster, and if you didn't know anything about DNA, you might make a model that looks like this and then twist it a little, to make it look like a twisted ladder. And you'd say, "There you go. Here's my twisted pairs."

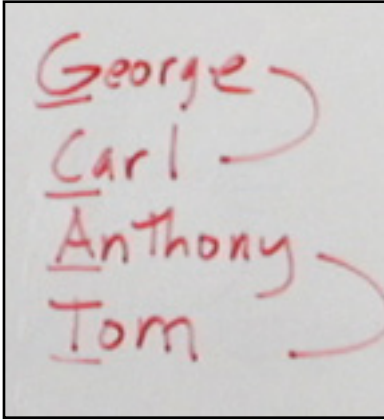
But they discovered something about the rungs, the places where you put your feet when you climb the ladder. They're only made out of four different kinds of chemicals. And the chemicals act in a weird way.

Here's a more accurate DNA thing, and it's got these guys here that are light orange and dark orange. It's got the guys that are kind of purple and orange. It's got the blue guys, and it's got the purple guys. The only four chemicals that are in DNA. It turns out, the blue guys like the purple guys. The blue guys don't like any orange guys at all. They won't associate with orange guys. And the purple guys won't associate with orange guys. And the orange guys say, "Hmm. Well, all right then, we'll just stick by ourselves." And the orange guys like each other.



More accurate.

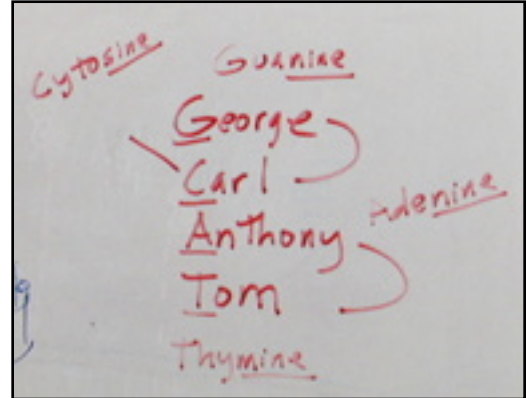
Transcript: Intro (cont.)



George only likes Carl, and Anthony only likes Tom.

And they gave them names. Since there were only four, and they make up everything that creates us, they had to name these things. So one could be named George, one could be Carl, one could be Anthony, and one could be Tom. Turns out, George only will hang around with Carl. They're good buddies.

And Anthony will only hang around with Tom. They're



Their real names: Guanine, Cytosine, Adenine, and Thymine.

good buddies. They won't associate with each other. And the first letters that I chose for these names indicate the chemicals that they are. If you look in Wikipedia or some other kind of encyclopedia, you'll find out that G stands for Guanine [*underlines the "nine"*]. It's got a "nine." The C stands for Cytosine. It's got a "sine" instead of a "nine." Now, Anthony is Adenine. And it's got a "nine" on the end. And Tom, he's Thymine. He's a "mine." So you've got nines, you've got mines, and you've got sines.

Those are the names they made up. I would have rather called them George, Carl, Anthony, and Tom myself. Easier to remember.

Today, we're going to be goofing around with some DNA to see if we can get it out of some fruit and see what it looks like. But first, we need a crazy story.

Story: "The Invisible Minion Heist"

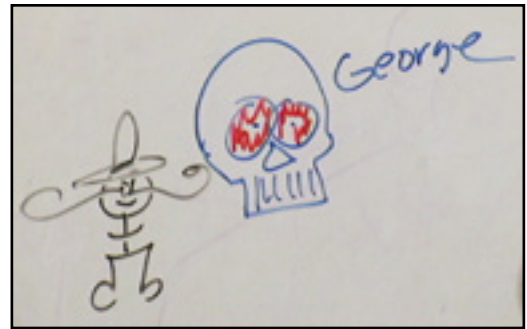
Evil Mister Fred has found, in a Mayan temple, a clear crystal skull. And the skull's name was George. And George could be a nice guy, but George could also be mean and angry. If George liked you, he could talk to you and tell you answers to your questions. But if you didn't treat George nicely, and didn't give him what he wanted, George had fire in his eyes. And George could make things move without touching them because he's got no arms. He's just a head.

Now, Mayan temples usually look kind of like pyramids. There'd be like a place at the top, and there's a flat spot, and then they usually had steps on them. And then they had stairs that got wider as they went up. And these are all steps, like that.

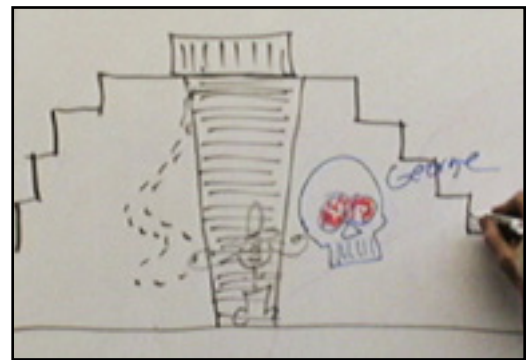
And Evil Mister Fred found the skull hidden in a tunnel deep inside. And he said, "Wow, I've got power now! This skull is great! I wonder what it could do to my minions." Because he was afraid to do anything with it himself. So he called some minions over and he said, "Minions, come here." The minions said, "Okay, boss, whattya got?" And Evil Mister Fred said, "Minion, I want you to go right up to that skull, stare right in its eyes, and say, 'Skull, you're uglyyyyy! I don't like you!'" And the minion said, "Oh, boy, that'll be fun!"

So the minion ran up to the skull, said, "Skull, you're uglyyyyy! And I don't like you!" And fire came out of the skull's eyes, and the minion got burned completely up. There was no minion. And Evil Mister Fred said, "Oops! Lost a minion." And then Evil Mister Fred felt a baseball bat hit him on the kneecap. He went "Aaaahh-oooh-aah-oooh! Where'd that come from?" There was no baseball bat there. There was no minion there. He started going around like this [*feeling the empty space with his arms*], and whack! He felt a minion! And he said, "Hey, you're an invisible minion." The minion said, "Yeah, isn't this great?" Whack! Whack! And he hit Evil Mister Fred and ran away.

And Evil Mister Fred said, "You stop that!" And the minion came back and he said, "Sorry, boss, I couldn't resist. This is just so much fun, and I like being invisible. And even my baseball bat's invisible." And Evil Mister Fred said, "Oooooohhh!" So then he had all of his minions run up to the skull and insult the skull, and he turned a bunch of them invisible. He put on some armor first, so he didn't get hit with baseball bats.



Evil Mister Fred and the crystal skull.



The Mayan temple.

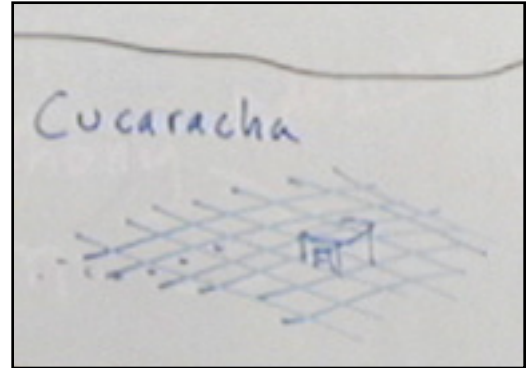


Invisible minion.

And then he said, "Now I've got invisible minions. I can do things with this. What should I do?" And the minions said, "Let's go rob a candy store. We want M&Ms." And Evil Mister Fred said, "Well, you know, that's a good idea." So he took them into town.

The town's called Cucaracha. And they sang that song in the streets. Everybody was singing the Cucaracha song. And the invisible minions went in there, and they couldn't resist. There were people standing all over, and they would just go bonk! -- and they'd hit one here, and they'd smack another one there. And the people were blaming it on other people in the street, and fights were breaking out all over the place.

And the minions went to the candy store in the middle of town. Next thing the store owner saw was piles of packages of M&Ms floating in midair. Then he saw the packages open up and the M&Ms get all scrunched up and turned into brown goo inside of something. And the brown goo floated away. And he thought, "Oh, that's gross!" And he ran off.

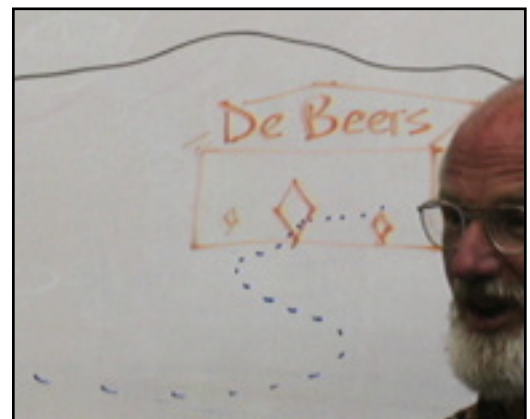


Candy store in Cucaracha.

So Evil Mister Fred learned that if the minions eat something, people can see what's in their stomachs for awhile until it turns invisible again. He said, "Now I know how we're going to do this. Now we're going to find something valuable."

So he went over to a place called DeBeers. Yeah, they drink a lot of beer there. And the building was shaped like, oh, it had doors in the shape of diamonds. It had chairs in the shape of diamonds. You drank out of glasses that were shaped like diamonds. People wore hats that looked like diamonds. And they sold diamonds there.

And Evil Mister Fred said, "Now's our chance. Diamonds are clear. I'm going to have the minions go into that place, sneak in through all the security systems, and they're going to eat the diamonds." So he did. He had the minions go in, sneaky minions. They could go right in the middle of the day, walk right through the front door, into the back, and here were all these tables with diamonds all over them. And guys were picking them up with tweezers and looking at them and saying, "Ooooh! Ahhhh!" And then the diamond would float right out of his tweezers and disappear. And diamonds were just -- before their eyes, the table of diamonds were going away. And they all were shouting, going, "What's going on? Stop it! Stop it! Somebody's robbing us! Lock the doors!"

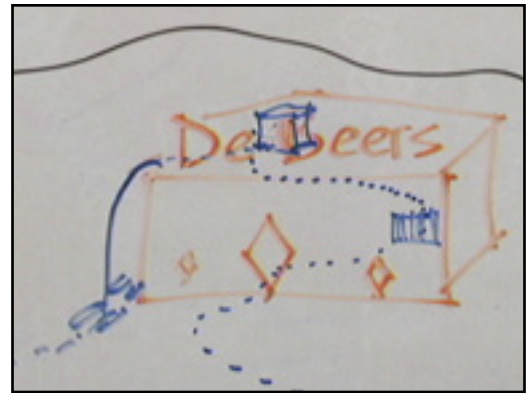


The minions sneaked into DeBeers to steal the diamonds.

So they locked all the doors. And now the dumb minions are locked inside, full of diamonds. And they said, "Ooh, boss didn't tell us about this. We've got to get out of here." They started looking through the building, and they found a hole in the wall with bars over it, and there was air coming out of the hole. They said, "Ah! A ventilation hole. We can do this."

They took their baseball bats and they smashed it in -- smashy, smashy, smashy. And people standing by said, "Wha? It just smashed itself!" Then they heard the pitter-patter of tiny minion feet. The minions made their way up to the roof where the air conditioner was, smashed that open, and then they jumped off the edge. And left giant minion footprints in the ground. And then they ran off, back to Evil Mister Fred's place.

Well, this was the robbery of the century. Billions of dollars of diamonds stolen right from their very eyes. And the minions said, "Boss, we did it! We did it!" And the boss said, "Okay, uh, the diamonds are inside of you, right?" *[Student: They need surgery.]* Yup. He says, "We're going to have to cut them out." Then he said, "Nope, I've got a better idea." He grabbed a vacuum cleaner and he stuck it down their throat and sucked all the diamonds out and cleaned them up. And he said, "This was the perfect robbery. No one will ever find out who did it. Or how they did it."



The minions got out through the air conditioning ducts and left footprints where they jumped off the roof.

And of course, the DeBeers guys called Jack and Jill. And they said, "Jack and Jill, you're famous detectives." And Jack and Jill said, "Well, how do you know we're famous detectives?" And they said, "Well, it's obvious. You wear a hat with earmuffs on the sides, and you have a magnifying glass. Only detectives look like that."



Jack and Jill, famous detectives.

So Jack and Jill said, "All right, what's the problem?" And they told them everything that they found, and how they lost all their diamonds. And Jack and Jill explored everything. They found the footprints. They found the smashed air conditioner opening. They saw the dust was moved in the ducts. And they said, "Ohh, these look like minion footprints. Hmmmm." But the footprints disappeared after they left, when they jumped off the roof. Now, if you're Jack and Jill, and you want to convict those minions of this horrible crime, what would you do?

Imagination and Brainstorming Time

[Students make suggestions] (THERE ARE NO WRONG ANSWERS! Whatever they say, you should reply: "That's a good idea," "They might do that," etc. After brainstorming, proceed with the experiments, then finish the story.)

We'll leave this "To be Continued . . ."

Experiment: "DNA Extraction"

As it turns out, if you look on the internet on how to get DNA out of fruit, some of the recipes require sixteen or twenty pages. And you read through all of that, and then you find another that's done on one page. It says, "Hey, you don't need to do this, and you don't need to do that, and you don't need to do this All you need is soap, salt, water, fruit, and alcohol." Well, we can do that.

The alcohol has to be really cold. That's why I have this container of alcohol sitting on ice over here to help keep it cold. And we're going to do it in test tubes because I like test tubes.

Now, we want to put fruit juice in the test tube. Fruit juice comes out of squeezed fruit, right? So you've got to squeeze the fruit. And I have some really old strawberries that were frozen. So our first test is, we're going to take some soggy strawberries -- they got moldy and everything -- and we'll take one of the gross little guys and splat [*drops a strawberry into a ziplock bag*]. And maybe we'll put in a little extra for good measure.



One tablespoon of soapy water is added to the bag.

[*Instructor demonstrates entire procedure before having students do it.*] This is a mixture of ordinary water with Miracle Bubbles soap and a little bit of salt. So we have a tablespoon, and we'll dump some of the soapy water on our strawberries. When you get the soap and the fruit, you squeeze most of the air out and zip it on the table. Make sure it's zipped. And you put them [*the strawberries*] in the



Squeeze out most of the air, zip the bag, and position the strawberries in the middle.

middle. There they sit, happy little fruits.

And then you lean on them -- gusshhh [*presses the strawberries with the palm of his hand*]. There. And you get the soapy stuff and the fruit all mixed together.



Then squish it between your fingers.

The water helps create a place for the DNA to go, the soap breaks down the walls of the cells so the DNA ruptures through it, the salt also creates osmotic pressure so that the DNA wants to jump out of the cells, and the soap also helps keep it in solution so it doesn't run away.



Crush the strawberries with your palm.

Squishing it with your fingers is better than putting it in a blender. The websites say that if you put it in a blender, it chops the DNA up into small strands and it doesn't work as well. So now we've got slop in a bag. But it's a mixture of strawberry skins and the green tops, and dirt and everything else. We want the juice, so we have to filter it.



Ladies' nylon sock filter.

Filtering turned out to be a problem. If you try to filter it through filter paper, it gets clogged instantly. Turns out, the most practical thing for filtering this is a lady's nylon sock. So you have to sneak up on a lady and cut a big patch out of her sock. And then you put the sock in a giant syringe.

And then you just have to get this [*bag of squashed strawberries*] in this [*large syringe*] without spilling it all over the table. You can spill a little, but you don't want to spill a whole lot, because you won't have enough.

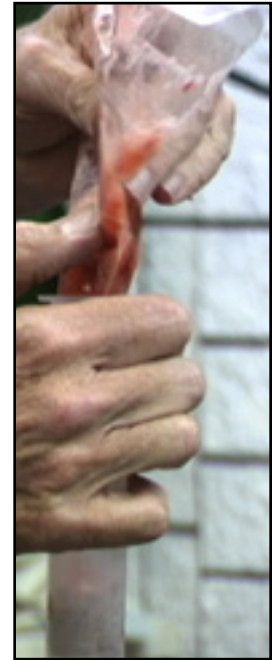
So you cut one of the corners, hopefully smaller than the tube, and then if you have a partner it's easier. You try to get it to go in there [*squeezes strawberry pulp through hole in corner of bag and into the syringe*]. Now, when you get it about half-full of glop,

then you have the test tube. Now, there's a temptation to set it on top of the test tube and push the plunger down. If you do, the test tube breaks into shards, razor-sharp, and your hand -- you can see it in slow motion -- goes down, and the shards cut through your wrist, and blood gushes out on the table. And you say, "Oooh, blood! My favorite!"

So if you want to avoid all that, put the plunger in there and squeeze it above the test tube. And you only need a teaspoon of the stuff in the test tube. And a teaspoon is only like, half an inch or an inch worth. And you see, even with the nylon sock, that's about it. If you can, it would be nice to get a little bit more. Let's just see what happens. Some of it escapes past the cork. We'll give it a plunge [*pushes plunger into syringe to make the juice drip into the test tube*]. That's good.

Then we need some icy alcohol. I don't know why icy is good, but they all said, every web site said, it's got to be icy alcohol. Okay, so we'll do the icy alcohol thing. And you go like that around the edges [*squirts alcohol against the inner sides of the test tube so that it washes down any juice that may be clinging to the sides*].

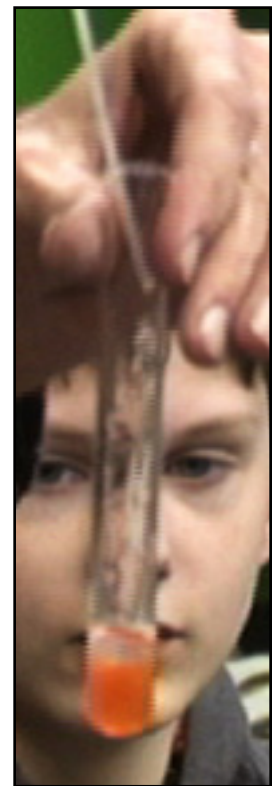
Now you wait a little bit. The DNA is already starting to separate. Little bubbles are drawing a milky . . . almost cloudy-looking DNA is going into the alcohol. And if you look carefully, you can see it going right into the alcohol.



Squeeze pulp out through hole in corner of bag.



Press the plunger to squeeze the juice into the test tube.



Squirt icy alcohol around the inside edges of test tube.



Use cotton swab to pull out DNA slime.

And that milky stuff is the DNA. For some reason, it likes to go up into the alcohol. It's almost like somebody told them, "We're going to have a party and there's going to be booze." And they say, "All right, beer!" And they go into the alcohol.

Now, if you want to collect it, you pretty much have to let it sit there and party down for awhile. You can go on and do a second one while this one sits in your test tube rack. I'll try it with this one to see if I can get any out, just so you can see what it does. If you put the q-tip thing in there and twist it, the DNA sticks to it -- ta-daa! DNA slime! There's more than that in there. And then you're going to put your q-tip with your DNA slime into one of these clear cups. And you'll try to remember that that one was strawberry.

Now, we have other fruit. There's bananas, grapes, onions, apples, and oranges. Choose a partner and we'll hand out ziplock bags. And we're going to dump in soapy, salty water.

[Instructor first puts a spoonful of the soapy water into each team's ziplock bag, then drops a strawberry or two into each one. Students proceed to do the experiment as demonstrated. When it's time for alcohol, the Instructor squirts it into the students' test tubes.]

When they finish with the strawberries, they select another fruit: banana, grapes, apple, onion, or orange. If they select an apple or an onion, the Instructor cuts off a section and chops it in a blender first, using a clean blender jar for each type of fruit.

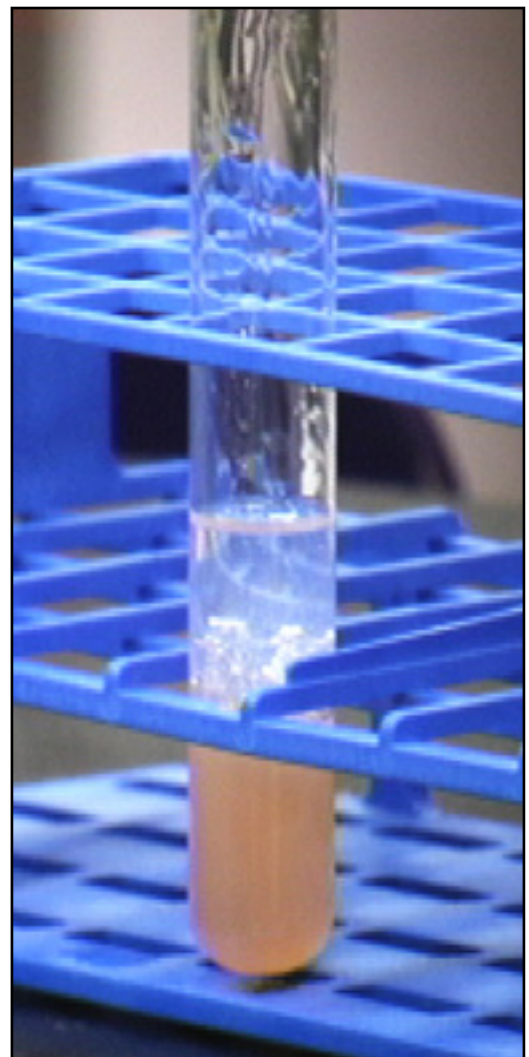


Additional fruit.

Students use a fresh bag for the second fruit. They empty the remains of the previous fruit out of the syringe, but save the nylon sock. They rinse the syringe, plunger, and sock in a bucket of water before reusing them.]



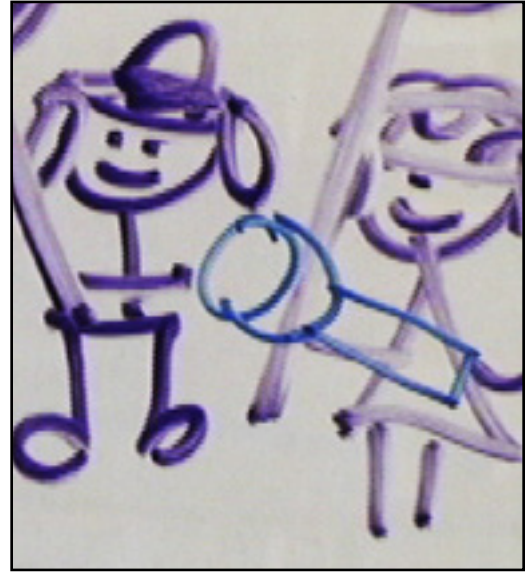
Use blender to pre-chop onions or apples.



End of Story

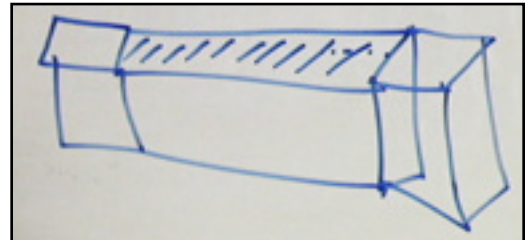
*** DO NOT * present this part of the lesson until after the experiments!**

So Jack and Jill, living in the city of Cucaracha, had to figure out who stole the diamonds. They saw minion footprints outside the building, but minion footprints could have gotten there for any number of reasons. That doesn't prove that they stole the diamonds. So Jack and Jill went in with their magnifying glasses and they searched everywhere. But even the minion hair was invisible. So they brought in a special black light, an ultraviolet light. And they shined it all around. And they saw little tiny hairs that could only be seen under the ultraviolet light. And they said, 'Mwah-ha-ha! These have got to be the hairs of the thieves, because they're the only invisible ones.' And they collected all the hairs, and they ground them up, and they put them in soapy water with a little bit of salt. And then they squeezed them through a filter. And then they added alcohol, and they collected the DNA out.



Jack and Jill's ultraviolet light.

Then they had the DNA from the minions run through jello. Know how you make DNA run through jello? You shock it with electricity. They put five thousand volts on the DNA, and it started running through the jello. And the little DNAs ran faster than the big guys. And they made stripes in the jello.



DNA stripes in jello.

And Jack and Jill said, "Now we have the DNA fingerprints of the thieves." And they went to Evil Mister Fred and said, "Evil Mister Fred, where are your minions?" And he said, "Good luck finding them. You won't find them." And Jack felt something rush by him, and he said, "What was that?" And Jill said, "Hey, there are footprints, but there's nobody there. Look at the footprints! They're keeping going!" And somebody *[during the brainstorming session]* said get yellow spraypaint. I like that idea. So Jack grabbed some yellow spraypaint and went *[mimes spraying]*, and all of a sudden the minions started showing up. And they grabbed some minion hair from their mustaches. And they did the DNA analysis and discovered they were the thieves. And Evil Mister Fred said, "That's not proof. That's just science. That doesn't mean anything at all." And Jack and Jill said, "Tell it to the judge." And the police came and grabbed Evil Mister Fred and all his yellow spraypainted minions, and took them off to jail. And they all lived happily ever after, except Evil Mister Fred.

End of Lesson

If you have questions about this lesson, please ask them through the online [Teacher Support Forum](#) on our web site.