



Teacher's Guide for:
Glove-o-Phones

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
- Experimentpage 2
- Equipment Listpage 3
- Story, Part 1: *Jack and Jill and Bluebeard's Ghost*.page 4
- Story, Ending.page 5

Video Transcript:

- Intro.page 6
- Story, Part 1 : *Jack and Jill and Bluebeard's Ghost*page 7
- Experimentpage 10
- Story Endingpage 12

Title Page of Video

Glove-o-Phones
A Rock-it Science Lesson
Filmed June, 2009

Rock-it Science
2110 Walsh Ave, Unit F
Santa Clara, CA 95050
www.rockitscience.org

(c) 2012 Rock-it Science Educationally Useful Programs. All Rights Reserved

Intro Quick Recap:

- When you blow up a balloon and let go of it, will it make a sound? (Demonstrate.)
- Why does it make a flub-a-dub sound?
- When air goes through your throat, there are floppy things inside that vibrate when the air goes by.
- We're going to try to make some balloony things that vibrate.



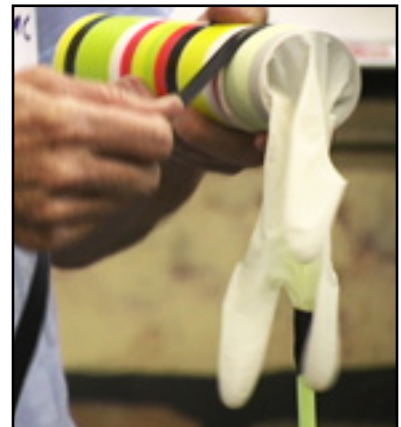
Blow up a balloon and then release the air.

Experiment Quick Recap: "Glove-o-Phones"

- Blow up a latex glove like a balloon, stretch the opening, and let the air out to make a sound.
- Pass out gloves to students and have them try to blow them up.
- Cut off the tip of one of the fingers of the glove, then tape a plastic straw into the opening. Make sure it's airtight so it doesn't fall off when you blow into the straw.
- Have the students do the same with their gloves.
- Place the open end of the glove over the end of a cardboard tube and tape it on so there are no gaps for the air to escape. If it's done properly, you can cover the end of the tube, blow into the straw, and the glove should blow up.
- Have students do the same.
- Tell students to try to make a sound with their glove-o-phone, but *don't tell them how to do it*.
- (Optional) After students experiment with their glove-o-phones for several minutes, give them a second cardboard tube. Tape it onto the end of the first tube to make a different sound.
- Have students write their names on their tubes.



Tape the straw onto the cut fingertip of the glove.



Stretch the opening of the glove over the end of the cardboard tube and tape it.

Equipment List: "Glove-o-Phones"

Items needed for Instructor:

- Balloon, any size

Items needed for Students:

Consumables (per student):

- Latex Glove
- Plastic Drinking Straw
- Sturdy Cardboard Tubes about 10" x 2" (a second cardboard tube is optional)
- Electrical Tape (about 2.5 feet per student)

Other:

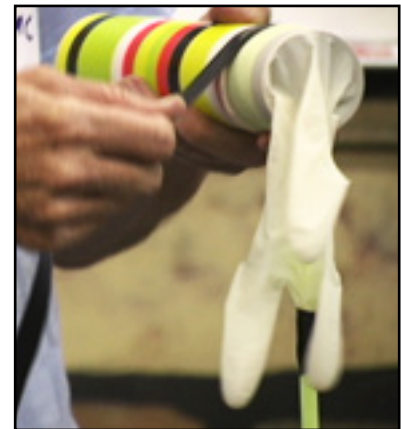
- Scissors
- Permanent Markers

Prep Work:

- None

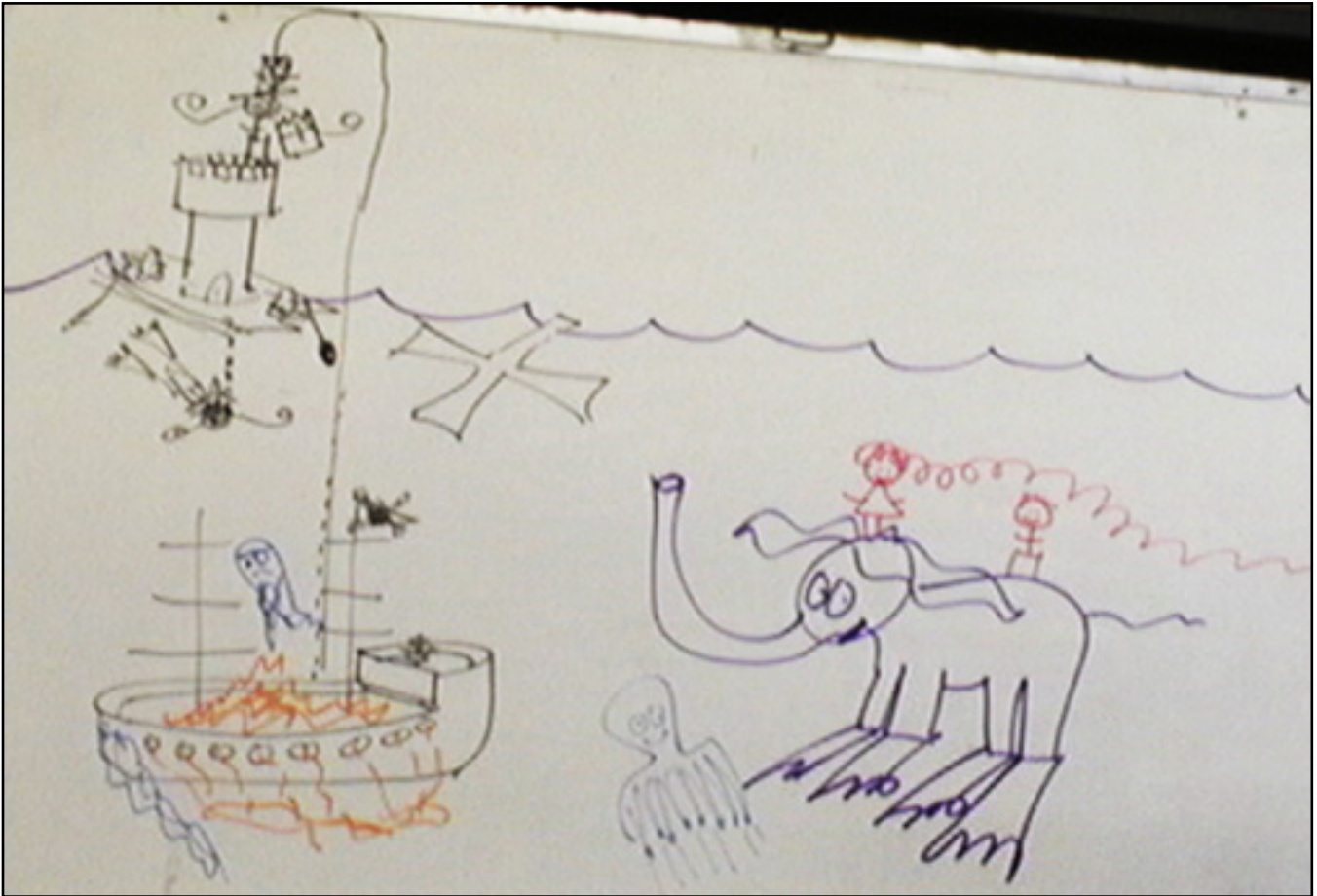


Latex glove



Cardboard tube

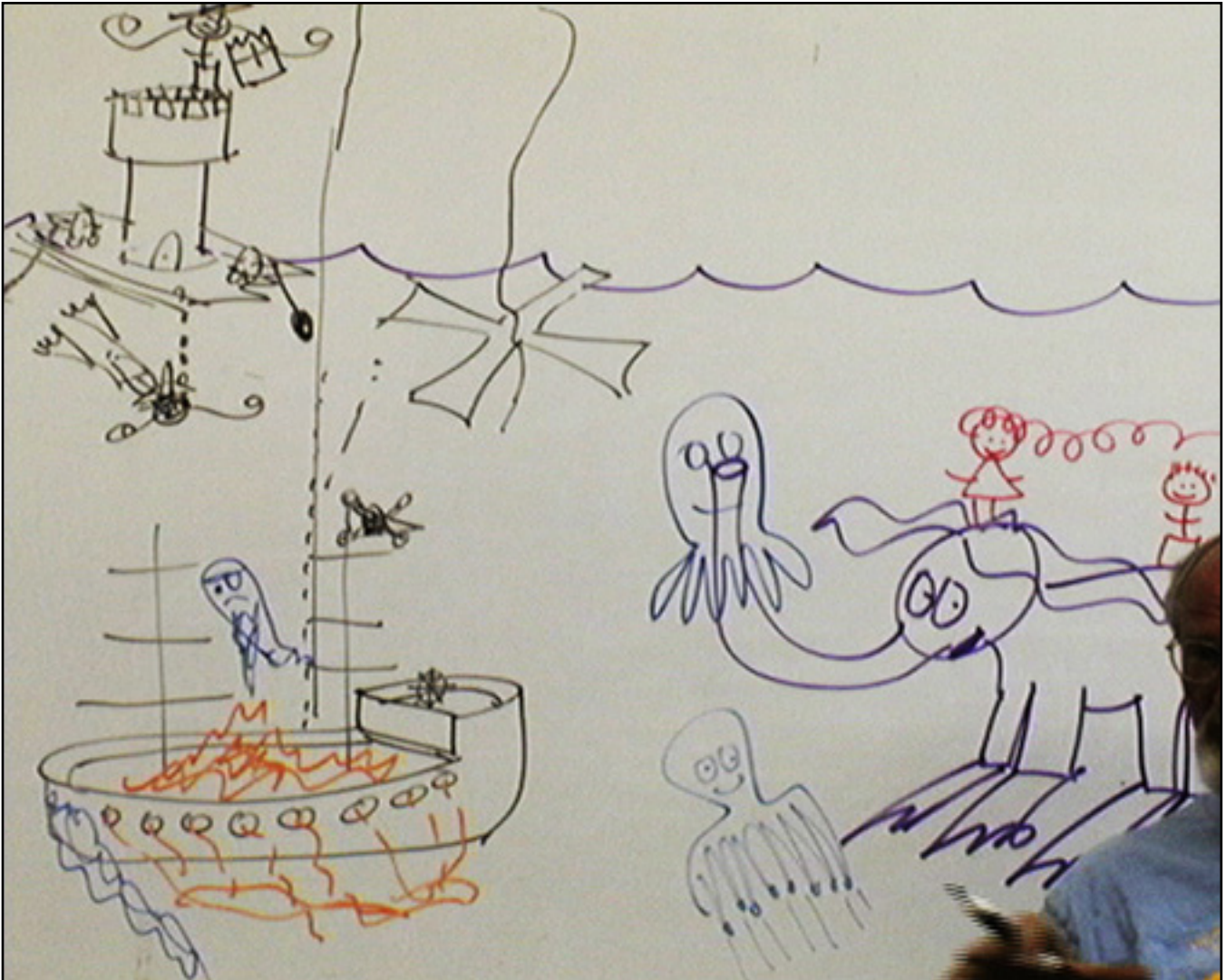
Story Recap: "Jack and Jill and Bluebeard's Ghost"



Part 1:

- Jack & Jill are riding an elephant underwater in the ocean, searching for treasure. The elephant has swim fins on his feet.
- On the bottom is a sunken pirate ship filled with gold. The ghost of Bluebeard haunts the ship.
- Evil Mister Fred is in his castle on a floating raft. He has a treasure map that leads him to Bluebeard's shipwreck.
- He sends a minion down to look, but the ghost scares the minion. The minion shoots up into the air and lands on Evil Mister Fred's head.
- He orders a ghost machine gun from the Acme Store of Everything and puts on a scuba suit.
- He swims down to the ghost, but the ghost roars at him. It's so scary, Evil Mister Fred forgets he has the gun and swims away in fear.
- Jack and Jill hear the noise and start coming to investigate. On the way, they meet an octopus who has no guts and is just empty skin. He wants to find some guts. He goes with Jack and Jill.
- When Jack and Jill and their elephant get to the ship, the ghost tries to frighten them. But the octopus wasn't afraid because he had no guts and no brains. But the elephant was scared.

Story Recap (cont.): "Jack and Jill and Bluebeard's Ghost"



Ending:

- Evil Mister Fred starts swimming back down with the ghost machine gun.
- The elephant wants to scare away the ghost, and the octopus has an idea. He puts himself over the elephant's trunk.
- When they get close to the wreck, Jill tells the elephant to blow, and he blows up the octopus like a balloon. It gets so big, it scares the ghost.
- The ghost is swimming up as Evil Mister Fred is swimming down. They collide, and Evil Mister Fred shoots backwards all the way to Pluto.

Transcript: Introduction

You've probably done experiments with balloon sounds before. *[Blows up balloon.]* Okay, I could keep blowing. If I did, will it make a sound?

[Student] It would make a popping sound.

It would pop, right? Yeah. If I let go of it, will it make a sound? *[Lets air out of balloon.]* Yeah, it makes a sound. Why does it go flub-a-dub-dub-dub-dub-dub?

[Student] Because it's letting out air.

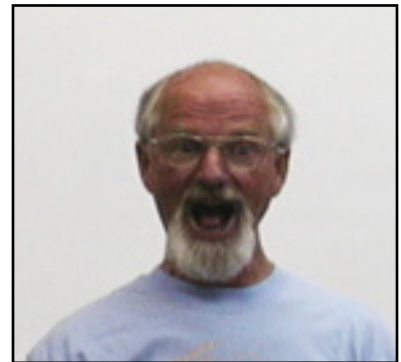
It's letting out air. Why doesn't it just go straight through and have the tube open the whole time? The hole's too small? Well, do this *[opens mouth wide]*: Ahhhhhhh. Air's coming through your throat, and there's flappy things inside there that vibrate when the air goes by. Whenever air goes by something, it tries to make it vibrate, and of course the tip *[of the balloon]* does vibrate.

We're going to try to make some balloony kinds of things that vibrate, kind of like your throat works. And I think it was the Scottish who used them in wartime, too. They called them bagpipes.

These balloons are just thin rubber. Your throat has thicker things in it, looks more like ropey things. We'll make those vibrate later, but first we need a crazy story.



Blow up a balloon, then let the air out noisily.



Open your mouth and say "Ahhhhhh."

Story: "Jack and Jill and Bluebeard's Ghost"

Hmm, should the story be in outer space, on the earth, or under the water? Under the water? Okay.

What color is water? Blue. There's blue water. And let's suppose that we have an underwater creature, like one of these things. There's an underwater elephant. And did you know elephants can breathe under water? How do they do it? Yeah, they can pick their trunk up and breathe through their trunk. So they can swim underwater and sneak around, so they're like a submarine with a snorkel device so they can go underwater.

So our elephant is swimming around under there. If he's swimming, of course, he needs swim fins so he can swim fast. And our elephant is being ridden underwater by Jack and Jill. They're in all the stories. Let's put Jill over here.

And Jack and Jill are searching for treasure beneath the ocean. Where are you going to find treasure under the ocean?

[Student] On the bottom.

On the bottom. What's it going to be close to? A shoe? How about if it's close to a shoe? There's a shoe. It's kind of a funny looking shoe. It's upside down. What if the shoe has a stick coming out of the bottom? And another stick? And what if the shoe has a steering wheel? And what if the shoe has holes in the side for ventilation? Is that a ship now? What if the shoe has a black flag with a skull. It's a pirate ship. This is Bluebeard's ship. You can tell because the ship has a blue beard.

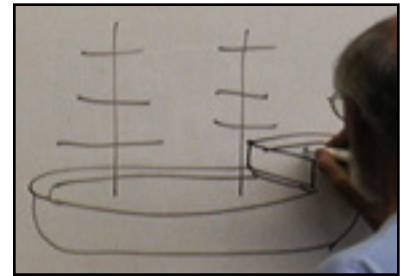
Now, Bluebeard was a pirate. He went along the bounding main, and he fired his cannons at other ships and stole of their gold and put it in his ship. He'd stolen so much gold that his ship sunk, and it was piled with gold coins. And there's gold leaking out through the cannon holes, gold in the sand. There was gold everywhere.

And there was a bluebeard ghost that lived on the ship. And he wears a patch over one eye. And he guards his gold. Anybody that comes by his gold, he tries to scare them away.

And one day Evil Mister Fred was floating around on a raft and he found a map, and he was looking for a place where the gold was to be found. Here's his castle, and it's floating on a raft. And he has his minions paddling his raft across the ocean. And he wants to get all of that gold and



Elephant with Swim Fins



Upside-down shoe with masts.



Bluebeard's Ghost with Gold.



Evil Mister Fred's Castle

spend it to buy armies, so he can take over the world. His minions are out there. Did I tell you what minions are? Little dumb guys.

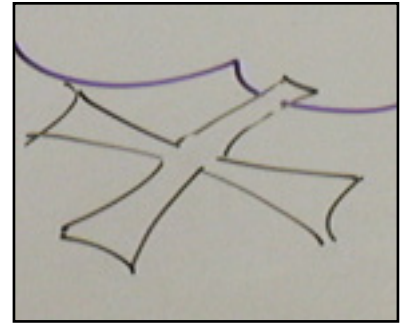
And he found a map, it was his treasure map with "X" marks the spot. And he came out into the ocean, and right there, on the water, was this great big black "X". And Evil Mister Fred said, "Ah! Lookit there -- just like the map says. 'X' marks the spot. There must be gold here." So he grabbed one of the minions, tied a big old weight to his foot, and threw him in the water. And the minion went ooohhhh -- sunk down there. And he saw the ghost. And the minion went, "Ahhhhhh!"

And now he's like a rocket-powered minion, and he shot up through the water -- shoom! -- way up into the air. And Evil Mister Fred said, "What was that?" He didn't see it because it went by so fast, and the minion came crash! And landed on Evil Mister Fred's head. Like that. And Evil Mister Fred said, "Oh, man, what did you do that for?" And the minion said, "It's a ghost, boss, it's a ghost! Don't go down there. It'll scare you to death." And Evil Mister Fred said, "I'm not afraid of ghosts. He can't stop me. I'll show that ghost a thing or two."

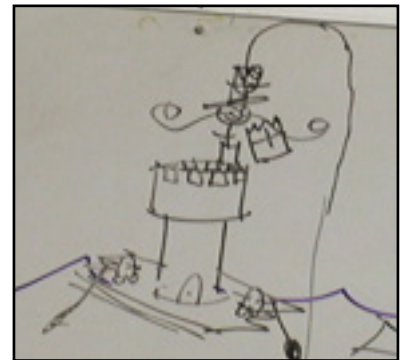
So Evil Mister Fred called the Acme Store of Everything and ordered a ghost machine gun. And he got himself a scuba diving suit. And he said, "I'm going to swim down there and see what this is all about." So now Evil Mister Fred is swimming under the water. What should you wear if you're going to swim under water?

Air tank. That's a good idea. So he's got a scuba tank on his back, and he's got a mask over his eyes, and he's blowing bubbles. So now Evil Mister Fred can swim down there. He swam down to Bluebeard's ghost, he looked him right in the eye -- because he's only got one eye -- and he says, "You can't scare me. You're just a ghost, and I'm real." And the ghost said, "Oh, yeah? Raaarrghhh!!" And Evil Mister Fred went, "Ahhhhhh!" and ran away. He completely forgot that he had a ghost-killing gun in his hand. He was so afraid he didn't know what to do.

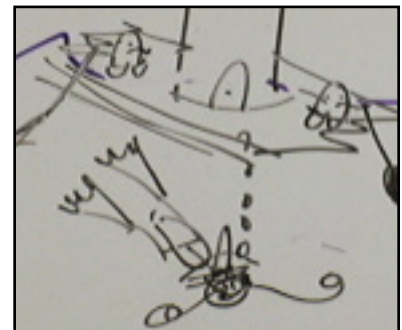
Well, Jack and Jill were down there on their elephant, and they heard this loud roar underwater. And they said, "What was that? We'd better go see." And they were on their way to go see, and they came across a blue octopus. And the octopus said, "Where are you going?" And Jack and Jill said, "We're going to go see what that loud noise was." And the octopus said, "Oh, can I go with you?" Jack and Jill said, "Why?" And the octopus said, "Because I'm a hollow octopus. I have no guts inside me. I'm just a skin. And maybe if you go there, I can find my guts and put them back inside."



"X" Marks the Spot



Minion on Evil Mister Fred's head.



Evil Mister Fred in Scuba Gear.



Hollow Blue Octopus.

And Jack and Jill said, "You're a very strange octopus. Sure, you can come along with us." The octopus said, "Oh boy, oh boy, oh boy!" The octopus was really good being hollow like that, with openings in the tip of every leg. And when he wanted to go somewhere, he opened his skin up and then he squeeze it back down -- pwhoosh! And when he did, jets of water shot out of each leg. He could go really fast.

And Jack and Jill and their elephant came to the sunken ship and saw all the gold. They said, "Whoa, look at all this gold. We could collect all this gold and feed all the poor people in the whole world. And the ghost Bluebeard came down, and he tried to scare them, too. He went, "Raaargh!" But the octopus wasn't afraid because he had no guts and no brains. And he just said, "Cool. A ghost. How are you doing?" And shook his hand. The elephant went, "Ahhhhh!" and swam away so fast that Jack and Jill couldn't hang on. And they were left there with the ghost and they didn't know what to do. Now if you were Jack and Jill, if you were underwater with a really bad ghost, and Evil Mister Fred was nearby with a ghost killer and wanted to steal all the money, 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: "Build a Glove-o-Phone"

I think we should work with some balloons today. I just happen to have a bag of balloons. *[Holds up a rubber glove.]* There's a balloon. First job is to try to blow up your balloon. *[Blows into the glove and inflates it.]* It's a rooster balloon. See if you can blow up the balloon and make it fly or do something like that. Is anybody allergic to latex rubber?

[Passes out gloves.] Test your balloon, make sure it holds air. Not as easy as it looks, trying to blow up a glove, is it? First breath isn't too bad, but after that you're kind of stuck. If you get really dizzy, you get extra points.

And try to make a squeaky sound *[releases air while stretching opening of glove]*. We're going to cut off the tip of one of the fingers of the balloon. We're going to cut just the tip off of one finger. Doesn't matter, any finger you like. Take a finger and cut just the tip off.

After you cut the tip off, we're going to stick a straw in it. And then we'll tape the straw on. We're going to stick the straw in a little ways and put some tape on it. *[Wraps electrical tape around straw, attaching it to glove.]*

When you get the straw and some tape, you now have a glove on a straw. Can you make noise with a glove on a straw? *[Blows into straw.]* What if you hold the other end? *[Holds glove opening closed, then blows into straw and inflates glove.]* Try that. And you want to make it so that when you blow on it, the straw doesn't fall off.

Jen will pass out tape and I'll pass out straws. *[To assistant]* Give them about half a foot of tape. Pick a straw, any straw *[passes out straws]*. Tape it on and see if it will stay there. Wrap it around tight. It needs to be a tight fit.

We're leaving the floppy end *[of the glove]* floppy, just so we can use it for something.

Now, we have tubes, colorful tubes, and we're going to put the end of your glove on the colorful tube. *[Stretches opening of glove over end of tube.]* Then we'll give you another piece of tape, bigger. What do you think we're going to do with that?

This time you're going to need a big piece of tape, about a foot. And you're going to tape the glove tightly onto the tube. If you stretch the tape as you go around it, it usually works better, but you can do it any way you like. You want it to be airtight when you're done. Okay, now



Blow up a latex glove to test it.



Stretch the opening to make a squeaky sound



Tape the straw onto the cut fingertip with electrical tape.



Hold the bottom closed and blow into the straw to test it.

you've got a glove on a tube. *[Places open end of tube against the table to close off air and blows into straw to inflate the glove.]* There. And if you did a good job, it takes ahold onto the glove. Then you try to make sound with it.

[Student] How?

Well, you have to figure that out yourself.

[Passes out tubes and tape. Students assemble them and try to make sounds.]

Want to try a longer one? *[Gives students a second tube to add to the first one, making a longer tube.]*

[Passes out permanent markers.] You can make it so you can tell which one is yours and which one is not yours.



Stretch the opening of the glove over the end of the tube and secure with electrical tape.



Place end of tube against table and blow into straw to check for an airtight seal around the Tube.



To make the glove-o-phone work, turn the tube so that the closed end is pointing away from you and the glove is stretched taut over the opening.

End of Story

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

Now we'll end our story. You never know how stories are going to end. So Evil Mister Fred ran away from the ghost. The octopus didn't run away from the ghost because the octopus had no brain. He's empty inside. And the ghost is guarding all the treasure. And Jack and Jill wanted to rescue that treasure to save all the poor people in the world. And Evil Mister Fred wants to use it to buy things for himself. And as Evil Mister Fred is flying away, he says, "Wait a minute! What's wrong with me? Am I a chicken? Am I a yellow belly? I can't be doing this. I'm going to go get that ghost." And he remembered his ghost-killing gun, and he says, "Yeah, I can do this."

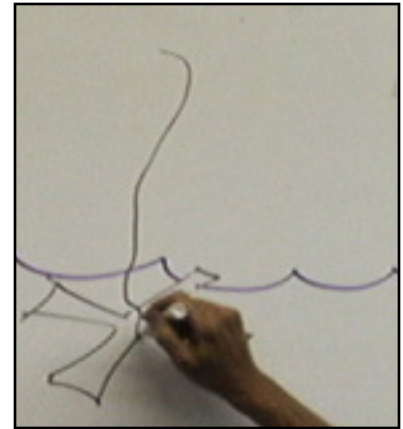
So he was flying in the air, so he came back down -- splash! And he's swimming toward the ghost. And the elephant says, "What are we going to do? We've got to scare that ghost away." And the octopus came swimming back, and he said, "I have an idea. Is it okay if I sit on your trunk?" And the elephant said, "Sure, why not?" So the octopus put himself right over the trunk like that. There's the octopus. And the octopus says, "Okay, swim over close to the ghost." And the elephant started swimming toward the ghost, and the ghost said, "What, are those two coming back again? I'm going to just scare the elephant away. He won't know what happened."

Well as he got closer, Jill tugged on the elephant's ear and she said, "Blow!" And the elephant blew as hard as he could. And the air went through his trunk and inflated the octopus. The octopus was huge! And then the octopus started vibrating like your glove-o-phone. He was going pbbtttt! underwater. And bubbles were coming out, and was so big his eyes looked like giant disks. And the ghost went, "Ahhhhhh!!!" and started to swim away as fast as he could. Well, Evil Mister Fred was coming down and the ghost was going up. And they met mid-water, and the ghost hit Evil Mister Fred, and went right inside of Evil Mister Fred. And Evil Mister Fred shot backwards because of the ghost energy, clear up -- Should he end up on the moon, Venus, Jupiter, Saturn, or Pluto?

Pluto, okay. So Evil Mister Fred shot up in the sky and landed on Pluto. And everybody lived happily ever after, except Evil Mister Fred. There's his mustache on Pluto.

End of Lesson

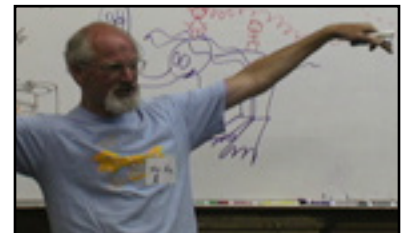
If you have questions about this lesson, please ask them through the [online Teacher Support Forum](#) on our web site.



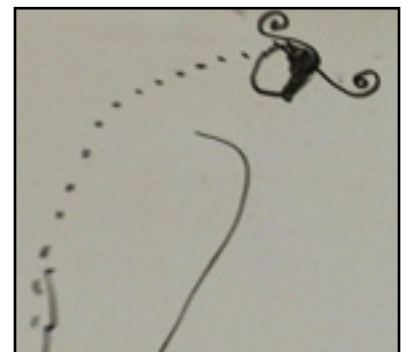
Evil Mister Fred splashes down into the Water.



The Octopus put himself over the Elephant's Trunk.



The inflated Octopus was HUGE!



Evil Mister Fred landed on Pluto.