**Name**  **Date \_\_\_\_\_\_\_\_\_**

Let’s look at flying.

We are going to make a toy in this science experiment! So we can learn and play at the same time. We will learn why things like airplanes can stay in the air. It is something to do with how air moves around things, but let’s make the toy first, because I know that’s what you want to do!

**Equipment ( things you need)**

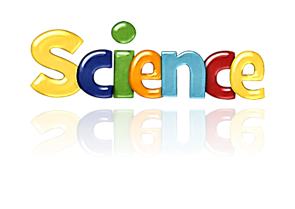
* A cup
* Blu tak
* Some tin foil to make the ball
* A bendy straw
* A piece of strong paper or card
* Some tape

**Method ( what you have to do to make the toy.**

1. First draw a circle around the mug on the card or paper. And cut out the circle. Cut a line into the middle then shape it so it makes a cone like an ice cream.
2. Use the tape to stick it together , you can ask your teacher for help if you like. Then cut a SMALL hole in the pointy pit of the cone. Just big enough for the straw to fit in.
3. Push the short bit of the straw into the hole. If it’s too long you can cut a little piece off.
4. Now use the blutak to push around the bottom of the cone on the inside, but make sure the straw can still let air through! The blutak is to stop the air going out the bottom of the straw and keep the straw in the cone.
5. Take some tin foil and make it into a ball. The ball goes in the cone and you blow through the straw. See what happens to the ball.

**Things to try**

|  |  |  |
| --- | --- | --- |
| See who can keep the ball in the air the longest. | What happens if you blow to hard or soft? | You can colour or use stickers on your cone to make it beautiful. |
| What happens if you use a heavier ball ( try some) | Will it work with other shapes, try to make a cube or triangle | Take a look at the other experiments your teacher has setup with air. |



**There is something in the air….**

So after you have tried the experiments it is time for you to say what happened and see if you can think why these things happened. We call this the results and we want you to write about what you saw and did. If you don’t know the answer you can ask for help, but some questions we want you to just try to guess.

1. What happened when you blew into the straw?

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1. What happens if you blow harder or softer into the straw?

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1. Why do we use the blutak, what happens if we take it away?

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1. Looking at the picture and then look at the notes on air and see if you can colour red where the high pressure air is in the picture and where the low pressure air in blue. Also see if you can label the parts of the drawing.

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**Why does this work**

**Why does this work?**

When you blow the air in the straw it moves faster and goes around the foil ball. This will push the ball into the air, gravity will push it down. When it stays in the same place the gravity and the force of air is similar.

But why doesn’t it fly out of the side, well this is about pressure. The air is moving fast around the ball and if the air is moving fast it has less pressure than all the air around it. So the air you blow stays going up and the ball stays inside it as well! If the ball moves out a little the high pressure air pushes it back in! pretty cool huh!

Try this with the hairdryer and the table tennis ball experiments below to try it again! It will show you what this means.

**There is something *else* in the air!**

|  |  |
| --- | --- |
| Hairdryer and table tennis ball experiment | Straw and table tennis ball experiment |
| Ok, so you have your toy, but let take a look at 2 more experiments that show you air pressure.  Then slowly put a table tennis ball in it. You can see it does the same as your toy; the ball will stay in the fast air (less pressure) as the air around this fast air is pushing it because that air has more pressure!  C:\Users\roy\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\NJ4RSSM6\pingpongball[1].jpg  C:\Users\roy\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\QPP9WBDM\Blow-Dryer[1].bmp | This one will **show** you that the pressure is different.  Tie two table tennis balls so they are a few inches apart, but same height.  Now blow with a straw or hairdryer in the space between the balls. Which way do they move  C:\Users\roy\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\NJ4RSSM6\pingpongball[1].jpgC:\Users\roy\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\NJ4RSSM6\pingpongball[1].jpgWhat can you see happening? |

