Moscow

Some people use the word ‘plasticine’, others call it ‘modelling clay’, it comes in different colours and you make things out of it. If you pick up a piece to make a model of Mummy, it might be hard to use straight away. It might break if you try to bend it too far!

So, you hold it in your hand, close your fingers around it. You squeeze it hard with your fingers, you give it a few hard pokes with the fingers and the thumb of your other hand. What happens? It gets softer, and you can make a model of a dinosaur.

When you made it warm, you gave it ‘energy’. And, when you poked it, you gave it ‘energy’. It was that new energy that you gave it that made it softer – made it so that you could change its shape, bend it and make it very thin without it breaking.

In Chapter 28 we talked about ice – you can’t bend it – the molecules of water [H_2O] stay in one place – but, when you give it heat [energy] the parts [molecules] form strings, they move around and you have liquid water. Then, if you give it even more energy – boil it in a kettle, the molecules move around completely separately and will even go up into the air as gas [steam].

Heating up air

Of course, when you heat up air, the atoms [oxygen, nitrogen] have more energy and buzz around faster than normal. They push each other out of the way and there is not enough room for those with more energy. If there is not enough room for all of these atoms there will be fewer of them in a balloon, for example. If there are fewer atoms in a balloon than the air outside, the balloon will be lighter so it will float [rise up in the air].

[Igor Ovsyannykov of Fancycrave: Many thanks
https://fancycrave.com/free-hot-air-balloon-photos/]

This magnificent photograph [made available by Igor Ovsyannykov] shows something we will never forget – people are heating the air in their hot air balloon. The atoms will get lots of energy and buzz around, soon there will not be as many left inside as outside, so the balloon will be lighter than the air outside – and it should float away. Let's see if it works.

Show your parents
Chapter 29.

[Andrea Enríquez Cousiño @andreoiide. Many thanks
https://unsplash.com/photos/C1HhAQrbykQ]

Yep! It works just fine. If you look in the red band you can see bright yellow flames – they are heating up the air as they are going along.

[Pedro Lastra. Many thanks
https://fancycrave.com/download-by-pedro-lastra/]

What a magnificent picture [from Pedro Lastra] – the heater doesn't have to be on all the time while balloons are flying.

Show your parents
Chapter 29.

A reminder

We talked about ‘Lawn Chair Larry’ in Chapter 26, and about zeppelins and other airships in Chapter 27 – these are NOT hot air balloons. These balloons and airships were filled with helium or hydrogen – which is lighter than air – and that is why they floated.

The hot air balloon has less air inside because it has been heated and buzzes around and some gets pushed out – that is why it is lighter. Yes, we knew, you knew that.

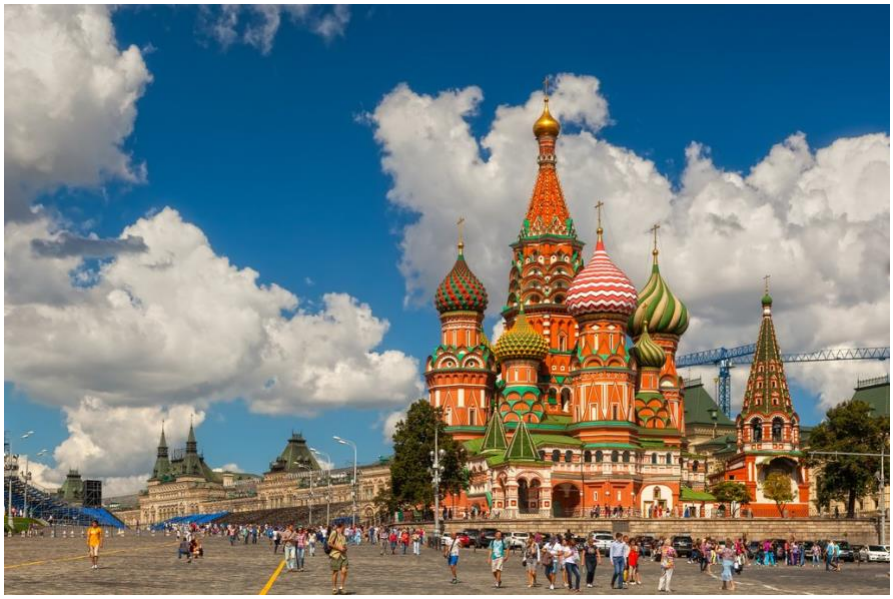
Moscow

Russia is the largest country in the world. Say you were in Nepal, one of the smallest countries in the world – which direction would you take to get to Russia?

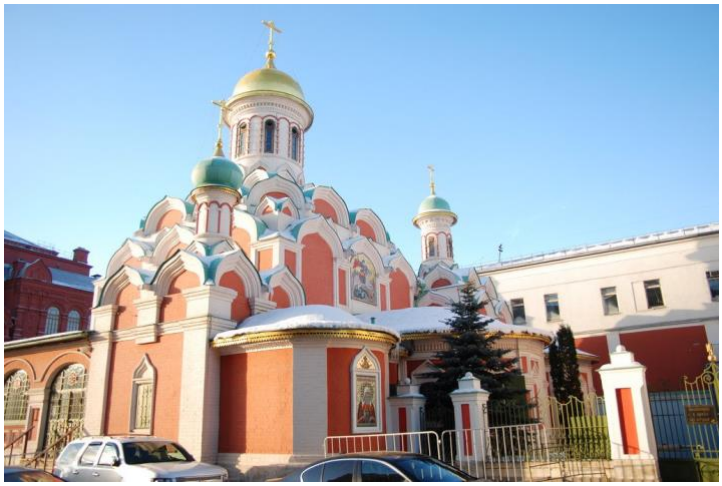
You might be able to work it out using this map.

Moscow is the capital of Russia. It has some beautiful buildings.

Show your parents
Chapter 29.



Saint Basil’s Cathedral



Kazan Cathedral

The Cathedral of Christ the Saviour

The strange thing is that the above 3 buildings are churches – but, Russia is not a very religious place. Mummy can explain.

Knock, knock.
Who's there?
Moustache.
Moustache who?
I moustache you a question, but I'll shave it for later.

Nice shoes! Yours?

Q: What English word has three consecutive double letters?
A: Bookkeeper [not a joke]