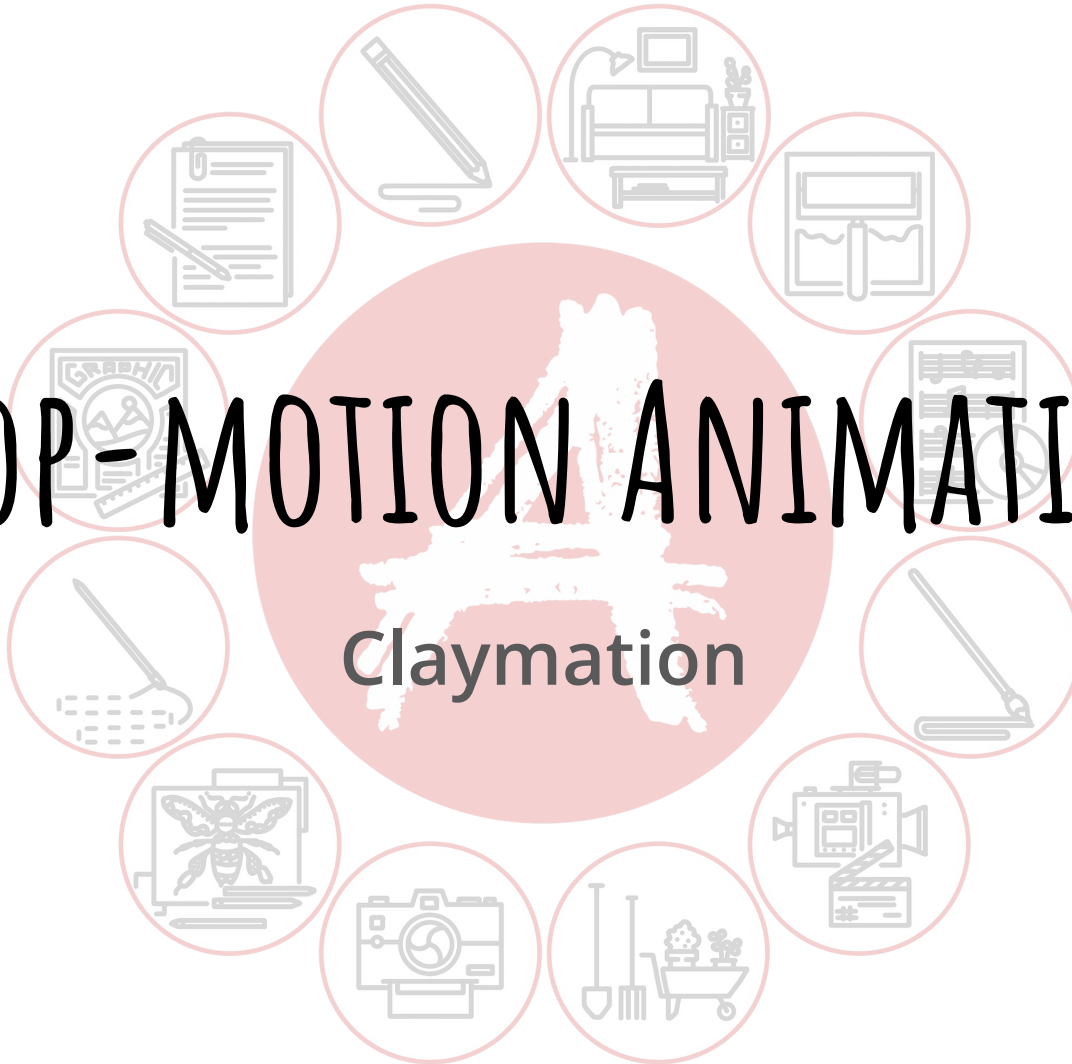


# STOP-MOTION ANIMATION

Claymation

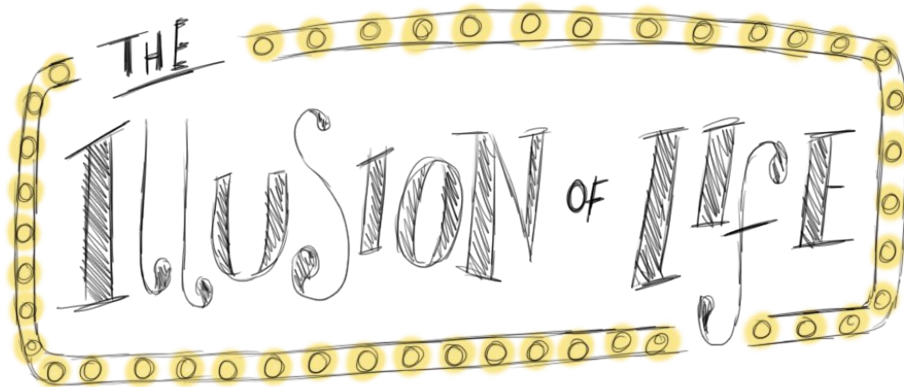


If you have already completed the OCA's creative challenge '**Stop Motion Basics**' then you will have already encountered the first section from this workshop which covers the foundations of animation and stop-motion basics.

You can skip forward to page 17 to dive straight into claymation, or work your way through from the beginning to refresh your memory.

# WHAT IS ANIMATION?

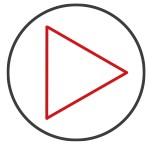
In its simplest form, animation is essentially making something that doesn't move (inanimate) look like it is moving (animate). This can be done through repeated drawings or paintings (traditional 2D), using puppets or clay (stop-motion) and using computer programmes and software (CG and 3D). All of these methods have one aim in mind: to create 'the illusion of life'.





## KEY RESOURCE: THE EVOLUTION OF ANIMATION

The following video shows how animation has evolved from its very first days using contraptions like the 'Zoetrope'. Whilst you watch these clips, think about the different types of animation used. How many of these films do you recognise?



### **The Evolution of Animation 1833-2017**

<https://www.youtube.com/watch?v=z6TOQzCDO7Y>

Many older animations are available to watch on Youtube, such as '*Gertie the Dinosaur*' and '*Felix the Cat*', and it's important to appreciate these as being the roots of modern animation.

Younger Animators might also get a kick out of watching some classic '*Looney Tunes*' cartoons.

# WHAT IS MOVEMENT?

A movement is when something goes from point A to point B in a certain amount of time. The amount of time it takes dictates how fast that movement is. In other words, if something goes from point A to B in a short amount of time then it is a fast movement, and if it takes a long time then it is a slow movement.



## EXPERIMENT:

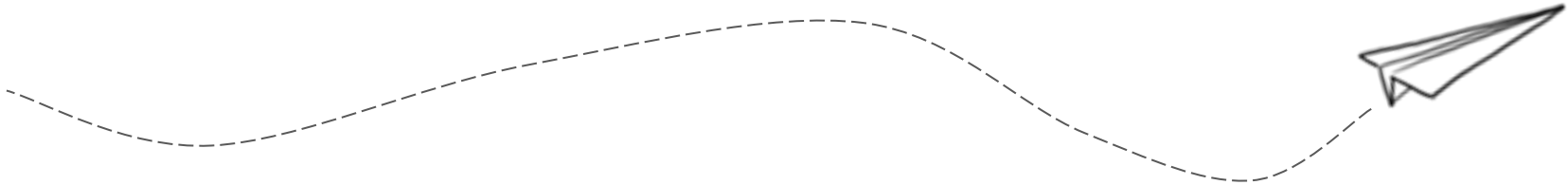
Try out some actions like waving, spinning in a circle and walking all at different speeds. How do the actions feel when you do them much slower than usual or much faster? Pay attention to where point A and B are in your movements.

# ANIMATED MOVEMENT

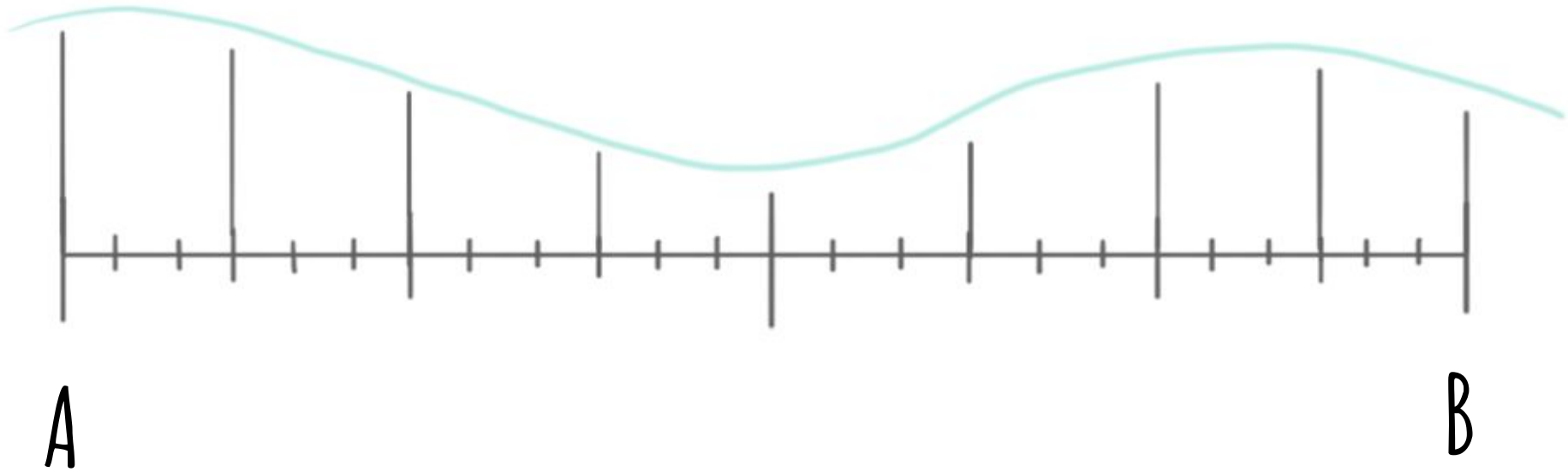
In traditional animation we break a movement up into little parts using either drawings or photographs.

It takes 24 images or **Frames** (drawings or photos) to make 1 second of animation. So if we know how quick we want an action to be, we can work out how many bits we need to break that action up into.

Don't worry if this is a little confusing; we're going to work through it using a paper plane as an example.



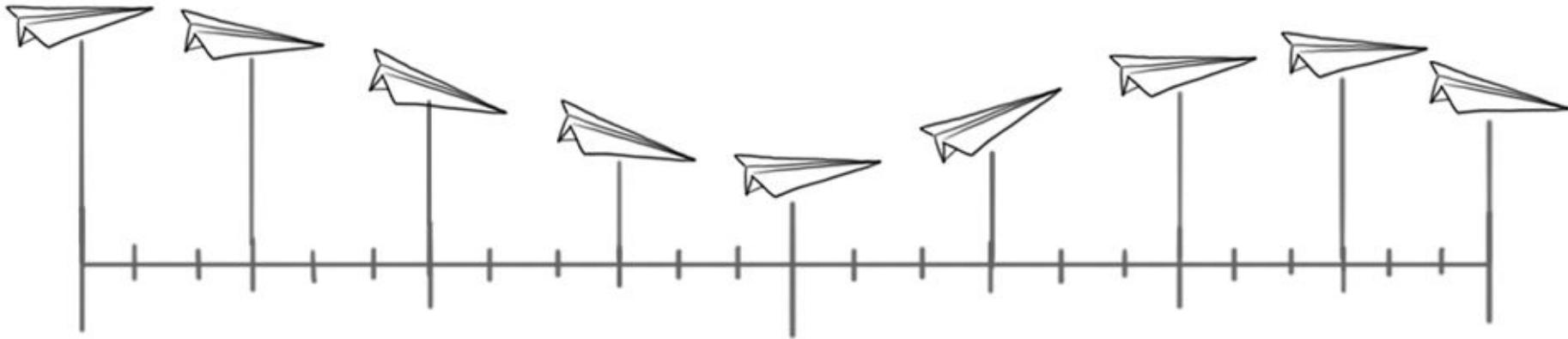
This gauge shows 1 second, broken up into 24 '**frames**' (images). The blue line



First of all, we will add images that show the main movement of the paper plane; these are called **Keyframes**.

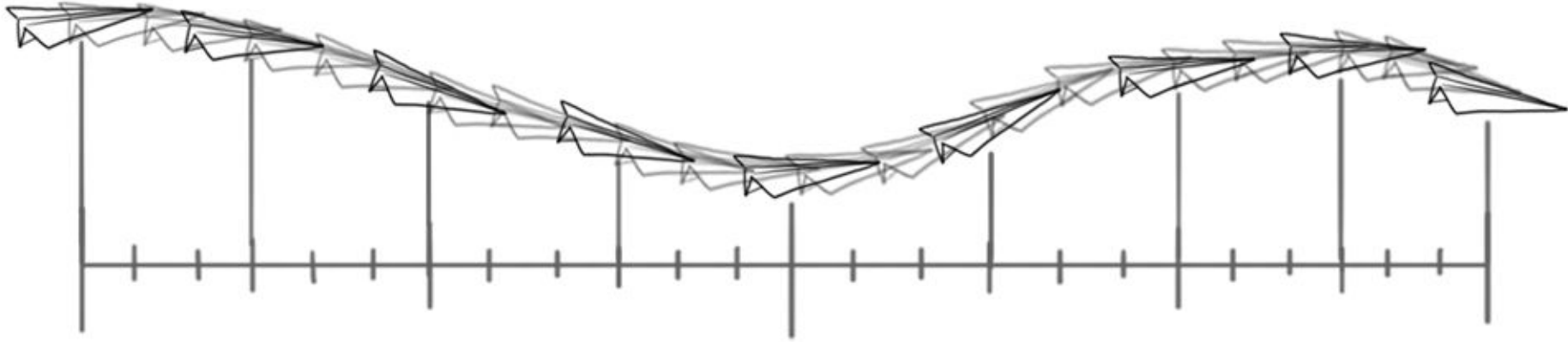
By doing this, we get a good idea of how the plane will move, how it will turn, and it's speed.

**Note:** Be sure that your object is always pointing in the direction that it is going to give it natural movement...we don't tend to walk where we're not facing!

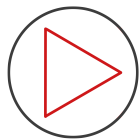




Now we just need to fill in the gaps between the **Keyframes**. This is called '**inbetweening**' (or 'tweening' for short).

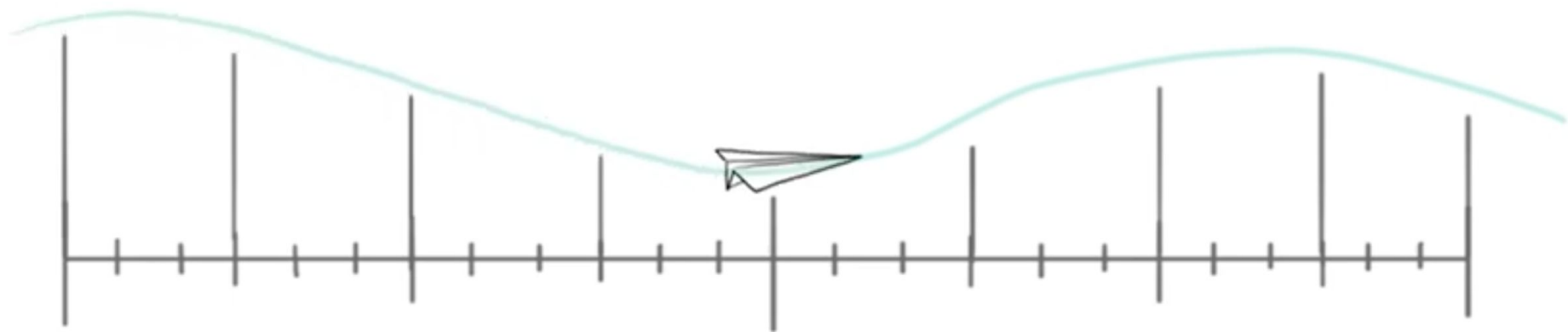


When we take all of these separate frames and 'play them' one after another, it creates an animated movement. We could speed up the movement by taking away some of the inbetween frames so that it doesn't last as long, or slow it down by adding more in, as demonstrated in the video below.



# ANIMATING A PAPER PLANE

[https://www.youtube.com/watch?time\\_continue=3&v=2vmxHQJ7I-Y&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=3&v=2vmxHQJ7I-Y&feature=emb_logo)



# STOP-MOTION ANIMATION

Stop-motion uses photographs as the frames for animation. This means that everything is happening in real life, right there in front of the animator. It takes a lot of patience and a steady hand, but with it we can make just about anything look like it has come to life.

The biggest difference in animating using stop-motion is that when we are animating an action it has to be done in order. We can't create the keyframes and then go back and fill in the gaps in between because we are physically moving the object we are animating. Because of this, it often takes a lot more planning to animate using stop motion.

Also, stop-motion tends to be done at 12 frames per second, instead of 24. Often this means taking double photos or making each photo last twice as long, which is known as '**shooting in two's**'.

The paper plane diagram we created can be used to visualise how it would move frame by frame in stop-motion with a cut-out. The action would be created by moving the paper plane cut-out a little bit at a time, taking a photo after each little movement. When all of the photos are 'played back' one after another it will animate the plane flying.

One thing that makes stop-motion exciting and unique is that it is all physical and real.

That means that real-life physics play a part in the animation, and it is easier to make movements feel more natural and controlled.



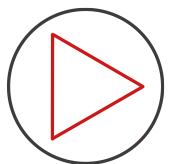
[https://www.youtube.com/watch?v=DHAMR7N9Gco&feature=emb\\_logo](https://www.youtube.com/watch?v=DHAMR7N9Gco&feature=emb_logo)



# KEY RESOURCE: THE EVOLUTION OF STOP-MOTION

Stop-motion has come a long way and, even with the advancements in Computer Generated Animation, it is still evolving. Stop-motion animation has been produced for as long as film has existed. It was used as the very first form of Special Effects in film, and continues to hold its own as an impressive and beautiful art form.

The following video shows how it has changed throughout the years. Whilst you watch, observe all of the different mediums used (clay, puppets, etc.) and think about how you would go about breaking down some of the actions and movements to animate them yourself.



## **The Evolution of Stop Motion**

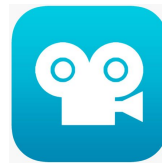
<https://www.youtube.com/watch?v=X0QemvmpzfQ>

# STOP-MOTION SOFTWARE AND APPS

Before we go any further, you will need some way to animate. The options vary depending on what you have access to, but one is by no means better than the other. When you start out it is better to choose the option that will let you focus on the animation, rather than having to worry about technology.

One of the easiest ways if you have a tablet or smartphone is to download a stop-motion app. Pick one that is well rated and free (you can do a lot with the basic features of most apps available).

**OCA recommends 'Stop Motion Studio' (free).**

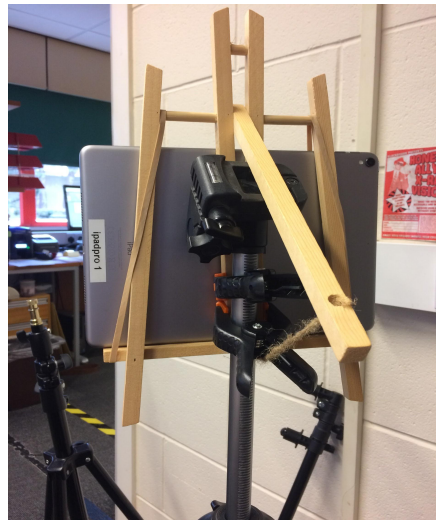


If you have the tools to do so, you can set up a camera rig, take the photo's and then compile them all together in a programme like Adobe After Effects.

# YOUR CAMERA RIG

Whether you decide to use a phone, tablet, or camera, you will need to set something up that will hold it still whilst you are animating. This could be using a tablet or phone stand, a mount or a tripod, but if you don't own anything like that you may have to improvise something.

Think of creative solutions. As long as it stops your camera from moving around and still allows you to take photos then it will work well enough. There's no need for expensive rigs when you're just starting out. In fact, even as a professional, you may find yourself having to make do in a pinch (clamps and strong rubber bands are life savers).



# CLAYMATION

Claymation is the name given to stop-motion animation made using clay. Clay is an excellent material for animating with, not only because it's possible to build wonderfully colourful and creative characters with it, but also because it's much cheaper and more readily available than most puppet-making alternatives.

It's not without its difficulties though. It's important to choose the right kind of clay to work with, first of all. The OCA workshop ['Sculpting with Clay'](#) will tell you more about the different types of clays available to you, as well as their pros and cons.

The best clay to use for claymation is Plasticine, as it doesn't dry out and comes in a range of colours. But if you don't have plasticine you can instead use childrens modelling clay. Pick a non-drying kind that holds its shape well. Dough clays are often too bouncy and dry out too quickly, so the kinds that come in strips rather than pots usually work best as they are stiffer, hold their shape better and stick well to each other, and it takes a long time for them to dry out.



# TIPS FOR SMOOTHER ANIMATION

You are now going to do a few exercises that will help you to get to grips with claymation and hone some basic skills that you will be able to take further. Here are some helpful tips for making the process run smoother:

- Keep a steady hand, and move everything with purpose. If you don't want it to move, then it shouldn't move.
- Move everything a small amount at a time. It is easy to remove frames if your movement feels too slow, but it is impossible to go back and add more in.
- Make sure you are out of the camera view when you photograph each frame (unless you are animating yourself).
- Try not to bump, shake or move either the camera or the surface you're animating on.

## EXERCISE: ROLLING A CLAY BALL

For this first exercise you will animate a clay ball rolling along a surface using stop motion.

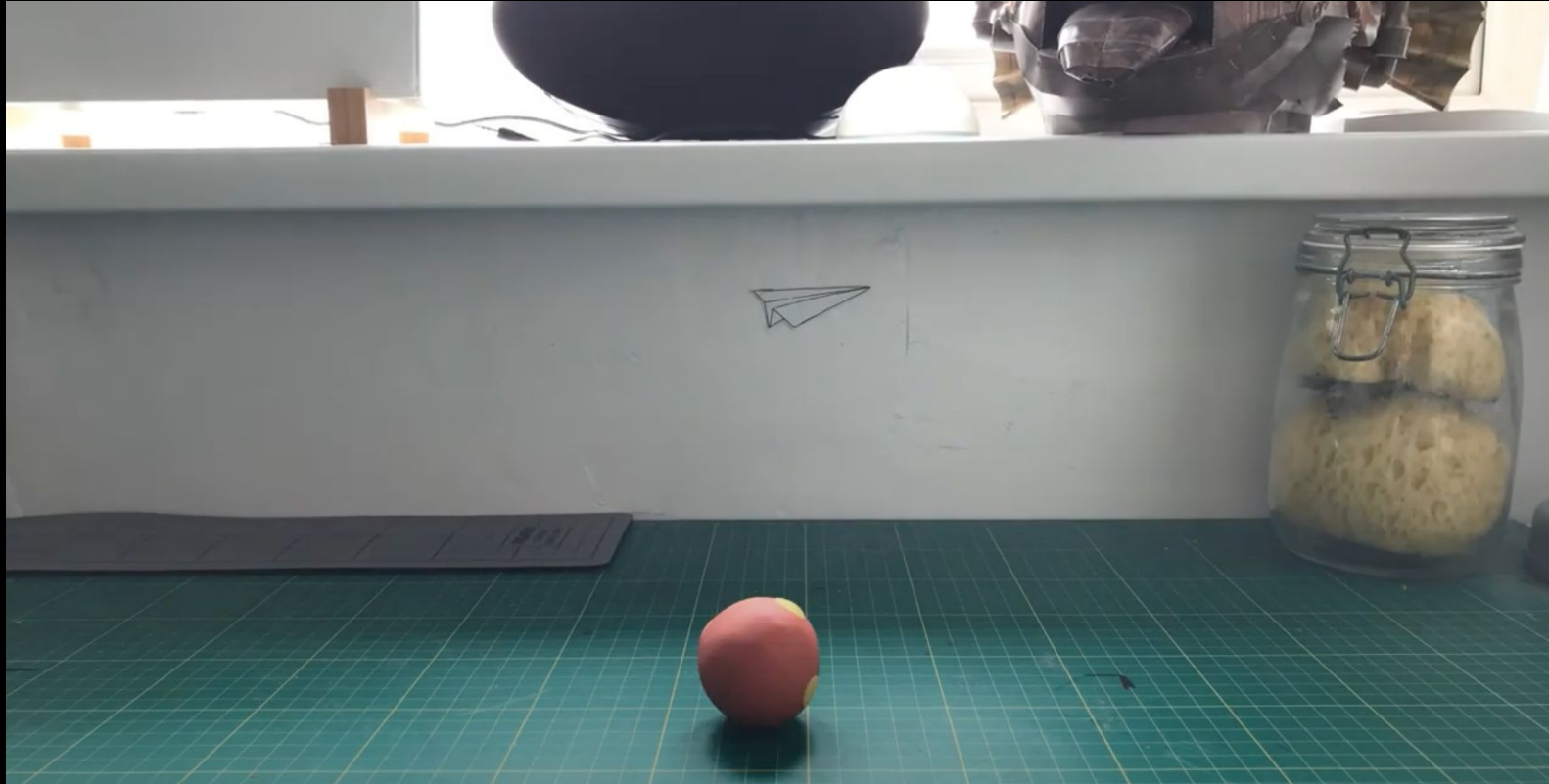
**Set up your animating space. This will be a desk or table to animate on and your camera setup.**

**Roll a smooth ball out of clay and place it at one end of the desk (in or just barely out of camera view). Move it (by rolling) a small amount at a time and take a photograph after each movement, making it travel from one end of the camera view to the other. Make sure you control the movement properly. Don't just push the ball, move it with intention.**

Experiment with how much you move the ball each time to see how it affects the speed of the animation.

# EXAMPLE: ROLLING A CLAY BALL

[https://www.youtube.com/watch?v=9EggNAItExo&feature=emb\\_logo](https://www.youtube.com/watch?v=9EggNAItExo&feature=emb_logo)



## EXERCISE: CRAWLING CLAY

This exercise involves more controlled movement of clay.

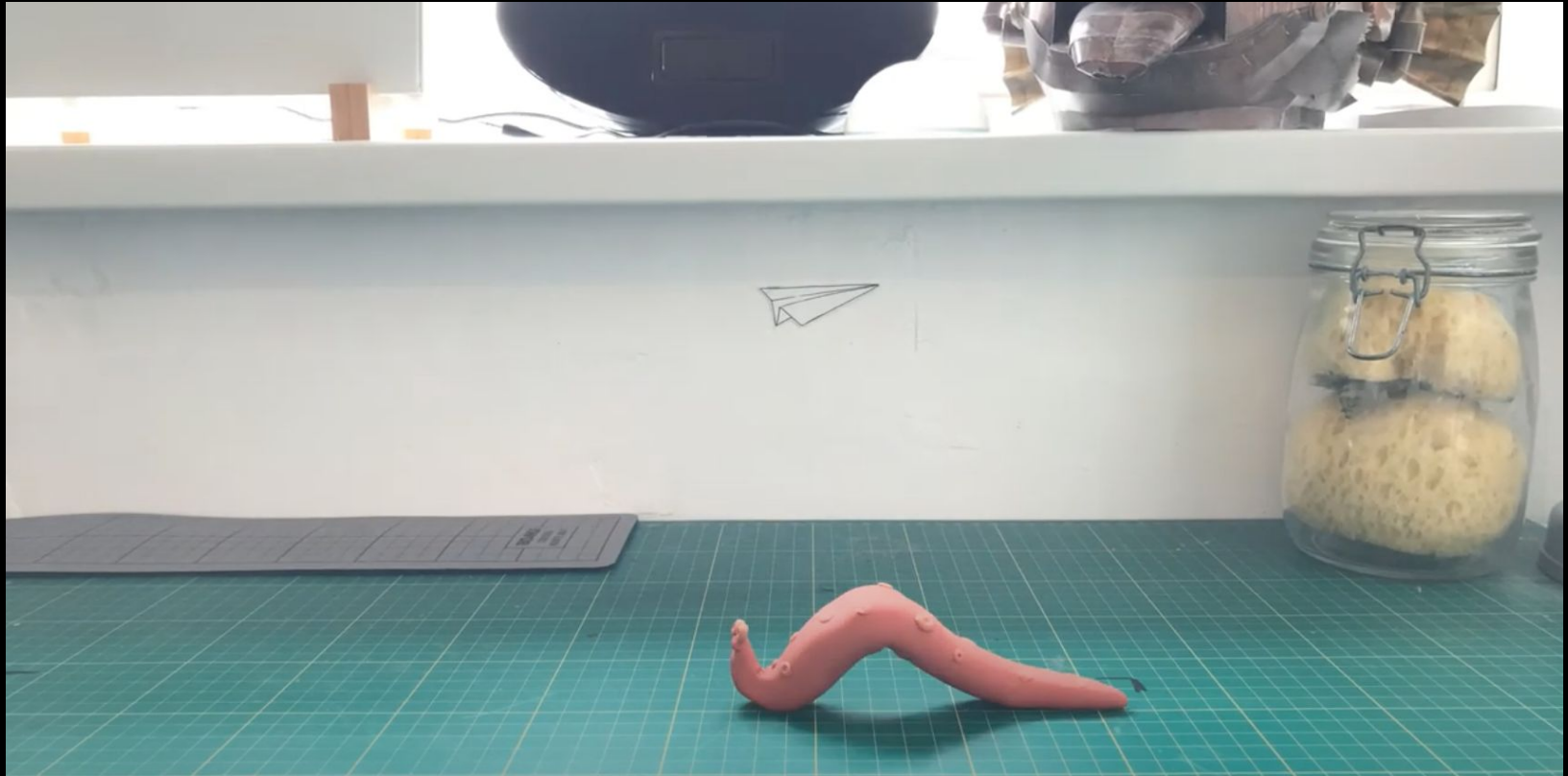
Make a long 'sausage' or slug shaped clay. This is our crawling clay.

**Place your clay at one end of your camera view. Now you will animate them crawling to the other end. It will move by hunching itself up in the middle and then sliding forwards, much like a caterpillar (see the example on the next page for a visual aid). Experiment first of all, without taking photos, to see how it will move bit by bit.**

Once you know how it will move, animate it caterpillar-crawling from one end of the screen to the other.

# EXAMPLE: CRAWLING CLAY

[https://www.youtube.com/watch?v=fOdS8Eo\\_544&feature=emb\\_logo](https://www.youtube.com/watch?v=fOdS8Eo_544&feature=emb_logo)



## EXERCISE: MORPHING

This is where using clay comes into its own. In claymation one thing can be morphed into another very easily, so we will now turn a ball of clay into something else.

**Roll out a ball of clay, and have an item or object in mind that you want it to morph into.** You may want to practice moulding the clay into the item first to get a feel for how it will look and the best way to morph it.

**Place your ball of clay in the centre of your camera view. Make very small changes to it, taking a picture after each change, to slowly morph it into your chosen object.**

Remember to move things with purpose. Try not to let the clay 'float around' whilst you mould it. It should stay in the same spot on the surface.

# EXAMPLE: MORPHING

[https://www.youtube.com/watch?v=Am\\_amtUYAx8&feature=emb\\_logo](https://www.youtube.com/watch?v=Am_amtUYAx8&feature=emb_logo)



## EXERCISE: CLAY PLAY

In animation it's important that your characters have personality, so in this exercise you will get your clay to play with something.

**Choose a small, light item, like a button.**

Create a simple shape from clay to animate. This could be a ball or a long mound. It shouldn't have a lot of features as this exercise is about giving a simple lump of clay personality.

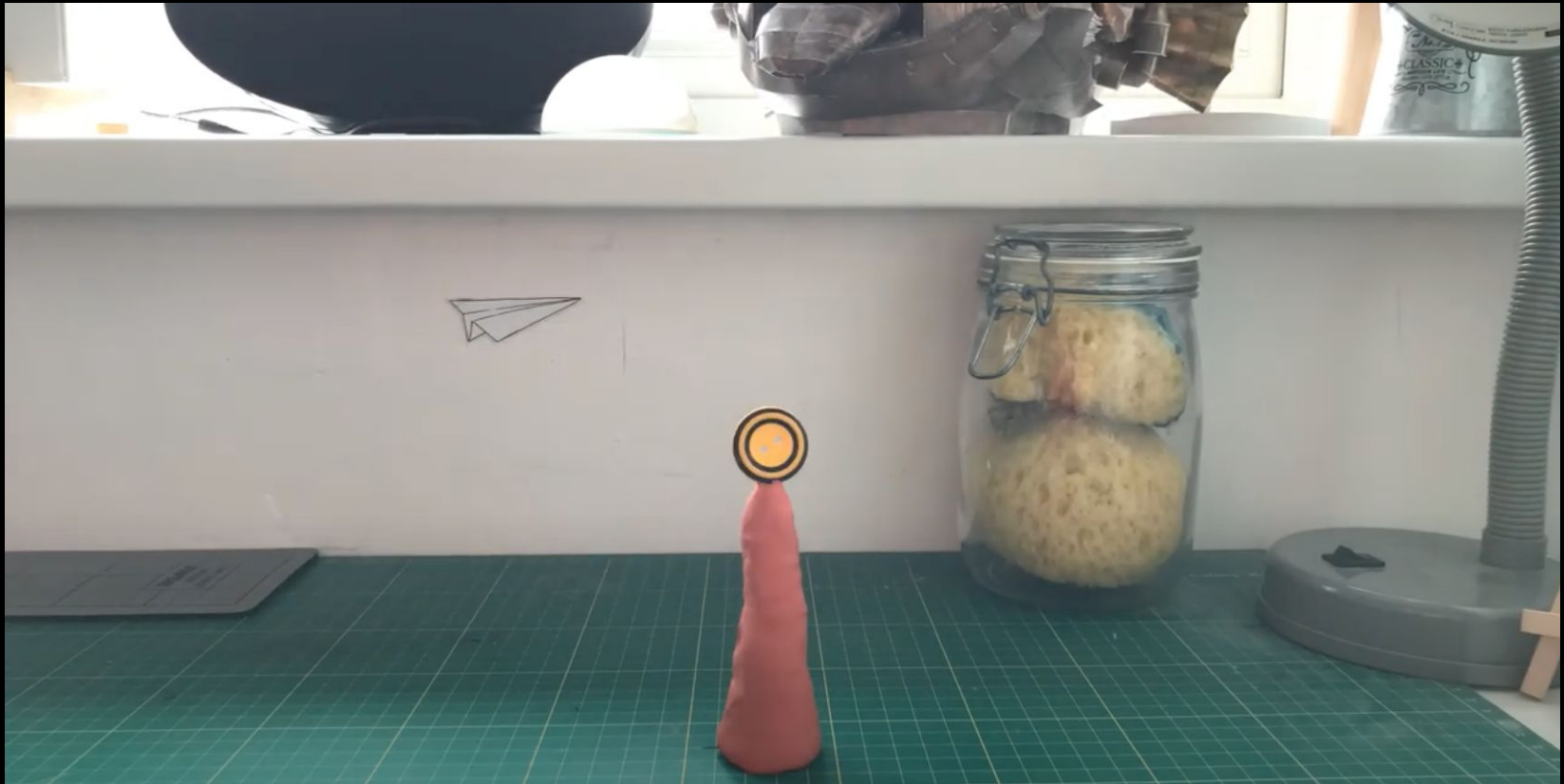
**Animate your clay 'playing' with the item. It could roll it around, morph around it, and the clay could change shape to do things with it.**

Experiment with different items or movements.



# EXAMPLE: CLAY PLAY

[https://www.youtube.com/watch?v=wtRINLf\\_EIQ&feature=emb\\_logo](https://www.youtube.com/watch?v=wtRINLf_EIQ&feature=emb_logo)



## EXERCISE: CREATE A CHARACTER

In the next exercise you will animate a clay character, but first you will need to create one.

**Create a character from clay** that has plenty of parts for you to move around or morph. It may have arms, legs or tentacles, or maybe it's just a big blob that can morph bits of itself into appendages. It doesn't have to be complex.

If your character has thin, long or complex parts you may find it difficult to keep it still between shots (photographs), in which case you will want to create an **armatured** character. To learn how to do this, check out the OCA workshop on [Sculpting with Clay](#).

If you're not sure what kind of character to make, choose 4 or 5 options from this random [Character Creator](#) and design a creature from the prompts.

# EXAMPLE: CREATE A CHARACTER



# FINAL PROJECT: CHARACTER CLAYMATION

Now you will animate your clay character or creature.

It is entirely up to you as to what you make your character do, but try to work to the strengths of its design.

- **Try doing different gestures, such as waving or clapping.**
- **Move it around the space. Does it walk, shuffle or drag itself around?**
- **Have it hold and play with an object. Maybe it moulds another ball of clay?**
- **You could make several mouth pieces, or mould your characters face into different expressions.**

Remember your basics. Move with intention and keep a steady hand.

# REFLECTIONS

**We hope you have enjoyed learning claymation with us. You can now take what you've learned and develop it further. The only limit is your imagination.**

It is important to remember to constantly self-evaluate your work as you go along. Keep rewatching your animations and learn from any mistakes. It takes a lot of patience, hard work and time to create good stop-motion, so whatever you create you should be proud of!



**The OCA would love to see what you've created. Share your films and experiments with us by tagging us in them on Facebook, Instagram and Twitter.**



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