

WORKBOOK

Animation, Moving image & Interactivity

New Zealand Certificate In Digital and Media Design (Level 4)

Animation, Moving Image, and Interactivity

SMS Code	MD410301	Teacher-directed learning hours	96
Level	4	Authentic work experience learning hours	54
Credits	15	Student-managed learning hours	
Prerequisites	n/a	Total Learning Hours	150
NQF Unit standards assessed in this course:			
This course approved in another Programme Yes / No			
Name of other Programme:			

Aim

To enable students to demonstrate the basic principles of animation, moving image and interactivity.

Learning Outcomes

At the successful completion of this course, students will be able to:

1. Identify, explain and apply principles of interactive design.
2. Access and use suitable materials to produce outcomes.
3. Use material and processes with an understanding of cultural, social, health and safety expectations and/or norms.
4. Converge various media to create moving images.

Indicative Content

- Moving images
- Digital and manual techniques for animation
- Appropriate software
- Projection mapping
- Video editing

Assessment

Assessment Activity	Weighting	Learning Outcomes	Assessment Grading Scheme (ie pass/fail; marks out of; percentage;marks out of/percentage; CRA)	Completion Requirements (ie must pass, must pass with minimum %, etc)
Project	100	1,2,3,4	percentage	Must pass with minimum of 50%

PROJECT BRIEF

Introduction

During this course, you will learn to create animation and moving images in a variety of ways including traditional hand drawn animation, stop motion animation as well as digital motion graphics. We will also explore interactive projection mapping software as a way of presenting animation and moving image in an installation context. This animation installation will become part of the final exhibition for the Certificate in Digital and Media Design.

Project brief

During a series of workshops, you will learn to create animations and moving images using different techniques. You will then learn how to deploy these animations using creative projection in a 3D space. We will consider how to integrate the 2D animation with the 3D surfaces of the space in a creative way.

You will then work individually to produce a series of four short animations that can be projected using projection mapping software. You should use different techniques learnt in class to create these animations.

Your animations will:

- Be between 10 and 20 seconds long each

You will also consider:

- Creating animations that can loop indefinitely
- Creating animations that follow a theme
- Creating animations that respond to projecting into a 3D space

Assessment Summary

All work to be submitted on Friday 22nd November by 4pm

4 animations uploaded to moodle

Workbook submitted in H302

Workbook 10%

- Class notes (LO 1)
- Animation concepts and storyboards (LO 1)
- Research into animation design (LO 1, 3)
- Project documentation (LO 1, 3)

Four Animations 90%

- Follows design brief (LO 1, 2, 3)
- Shows experimentation with different media and animation styles (LO 2, 4)
- Shows an understanding of site specific animation (LO 1, 2, 4)

Animation, Moving Image & Interactivity

2 0 1 9

NZ Certificate in Digital and
Media Design (4)

Lecturer : Morgan OLIVER
morgan.oliver@op.ac.nz



4
Elements



SCAN ME

4 Elements

THEME : The 4 elements
TYPE OF ANIMATION : 2D animation

DURATION : 00'12"
RESOLUTION : 1920x1080

Link: <https://youtu.be/4y9-22sckIU>



T H E
S U I T C A S E




SCAN ME

The Suitcase

THEME : Travel
TYPE OF ANIMATION : Stop Motion

DURATION : 00'55"
RESOLUTION : 1920x1080

Link: <https://youtu.be/lzT1jWb-nWY>



DISCOVER

NEW
Caledonia



SCAN ME

New Caledonia

THEME : Travel
TYPE OF ANIMATION : Motion Graphics

DURATION : 02'21"
RESOLUTION : 1920x1080

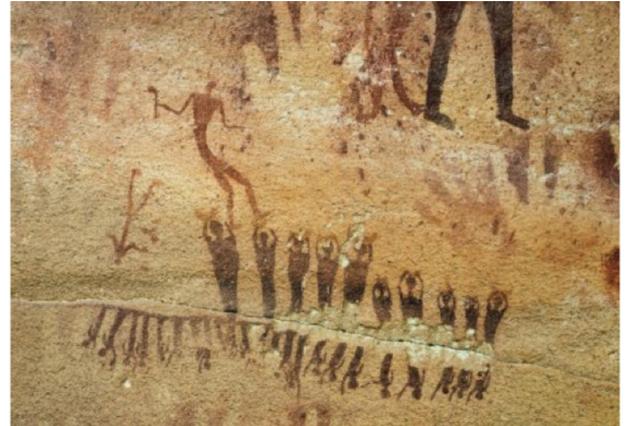
Link: <https://youtu.be/lxhBsJHp2TQ>

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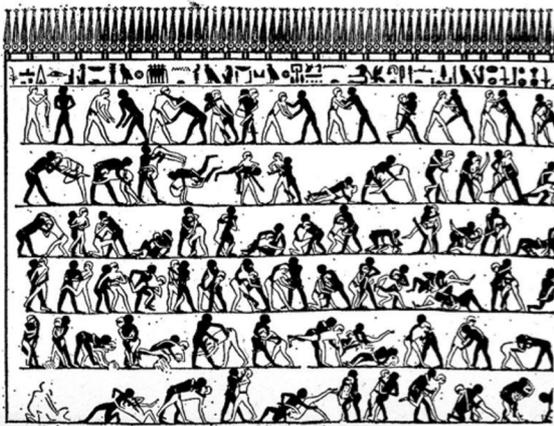
The History of Animation



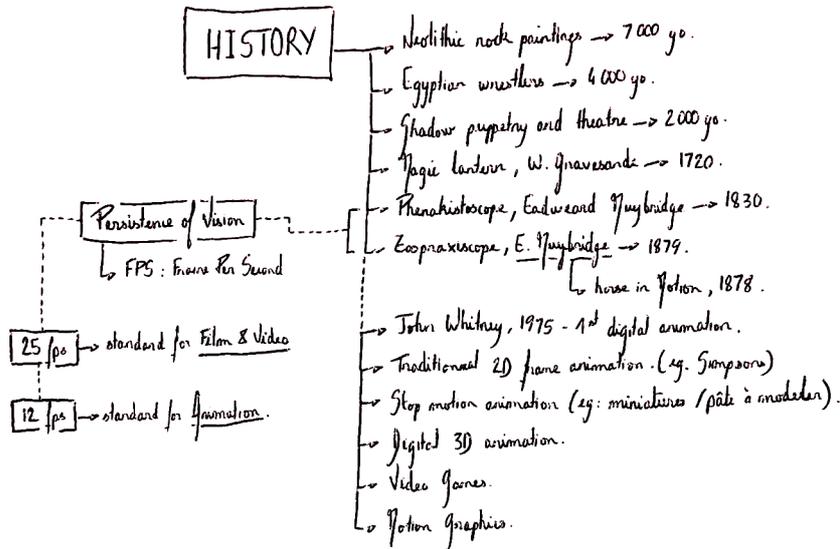
Neolithic rock paintings in the Cave of Beasts. More than 7000 years old



Neolithic rock paintings in the Cave of Beasts. More than 7000 years old



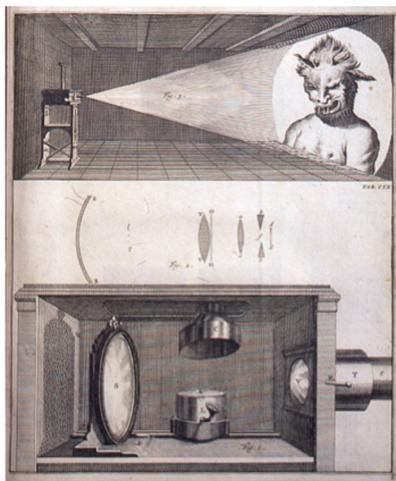
Egyptian burial chamber mural depicting wrestlers. Approximately 4000 years old. Similar to frames of animation



CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=1067986>

Shadow puppetry and theatre likely developed more than 2000 years ago

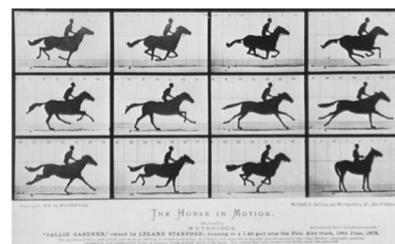
The History of Animation



A page of William Gravesande's 1720 book *Physices Elementa Mathematica* with Jan van Musschenbroek's magic lantern projecting a monster.



Phenakistoscope, 1839, Eadweard Muybridge
Invented in the 1830s



Eadweard Muybridge, Horse in Motion, 1878

Zoopraxiscope, 1879, Eadweard Muybridge

Early Animations on Film



Humorous Phases of Funny Faces 1906

https://commons.wikimedia.org/wiki/index.php?title=File:33AHumorous_Phases_of_Funny_Faces.svg



Katsudo Shashin 1907

[https://commons.wikimedia.org/wiki/index.php?title=File:33AKatsudo_Shashin_\(1907\).webm](https://commons.wikimedia.org/wiki/index.php?title=File:33AKatsudo_Shashin_(1907).webm)



Fantasmagorie 1908

https://commons.wikimedia.org/wiki/index.php?title=File:33AEmile_Cohl_-_Fantasmagorie_1908_-_YouTube.theora.org

By Emile Cohl - <http://www.animationgoosebarn.com/fantasmagorie> - Public Domain, <https://commons.wikimedia.org/wiki/index.php?curid=573351>



Gertie the Dinosaur 1914

https://commons.wikimedia.org/wiki/index.php?title=File:33AGertie_the_Dinosaur.svg

The History of Animation

Early Computer Generated Animation

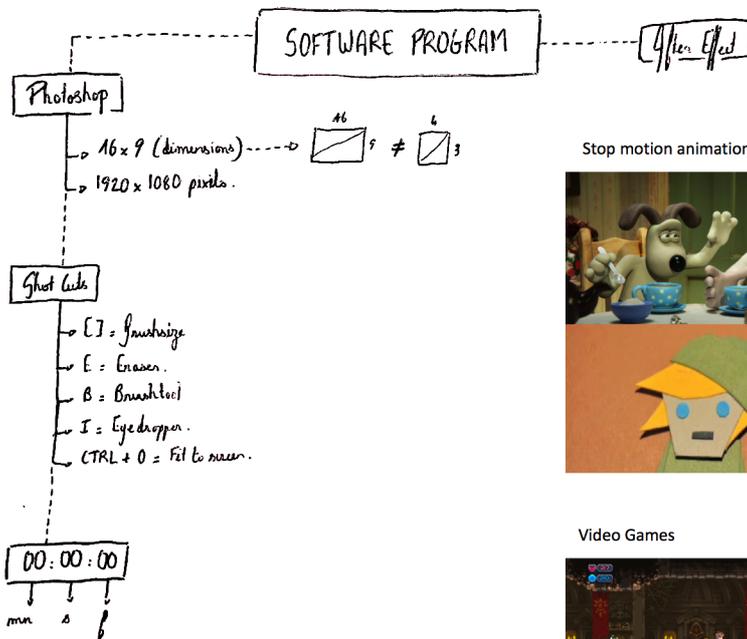


John Whitney

<https://www.youtube.com/watch?v=9m750d54>
<https://www.youtube.com/watch?v=275vY5ab0>

Early Motion Graphics
Saul Bass and John Whitney

<https://www.youtube.com/watch?v=8i8GpDdr5>
<https://www.youtube.com/watch?v=BpWMOFNp7Ss&t=48s>



Stop motion animation

<https://www.youtube.com/watch?v=Xi8iGpDdr5>
<https://www.youtube.com/watch?v=BpWMOFNp7Ss&t=48s>



Video Games



Traditional 2D frame animation



Digital 3D animation



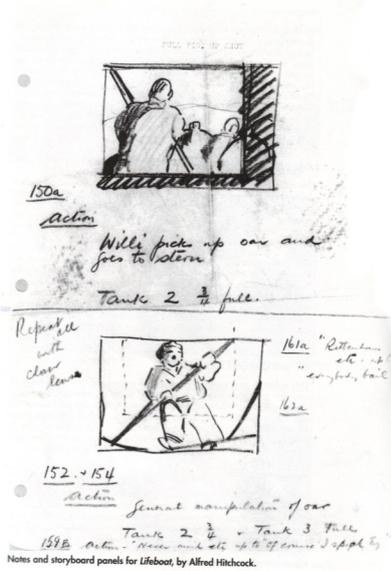
Motion Graphics

<http://bito.tv/>

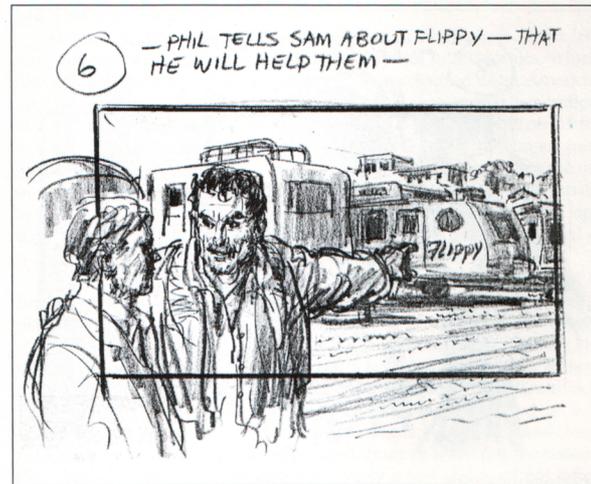
<https://www.youtube.com/watch?v=3uenXdbycgY>



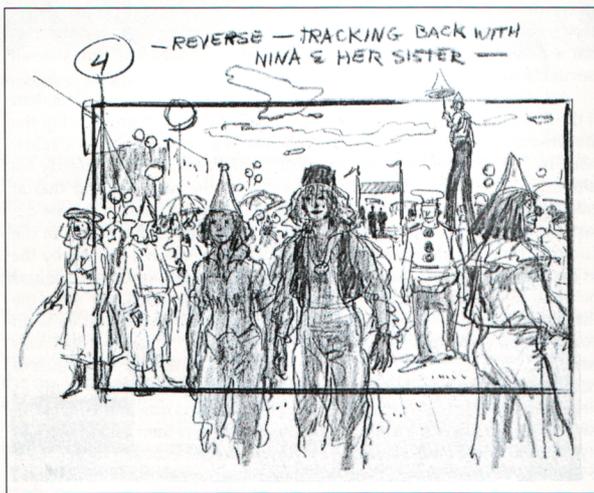
Why use storyboards



These are Hitchcocks own sketches. Your own workbook should contain sketches and development like this



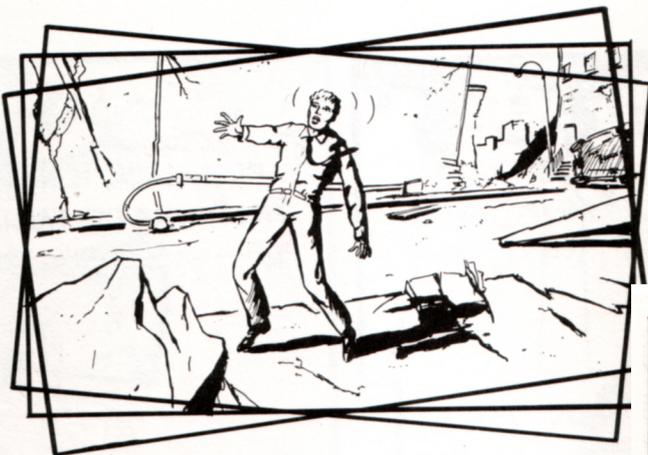
A style of storyboard sketching to show framing and camera choices



↑ DOLLY INTO CLOSE-UP ↑



Dolly into close-up



WOMAN WALKS IN FRONT OF CAR. WE VIEW HER FROM BEHIND.



WIDE SHOT - WOMAN + CAR

REVERSE ANGLE AS SHE'S CAUGHT IN HEADLIGHTS. CAMERA MOVES INTO C.U.

M.C.U. - WOMAN

Figure 3.9: Written descriptions in boxes are the simplest type of storyboard.

Why use storyboards

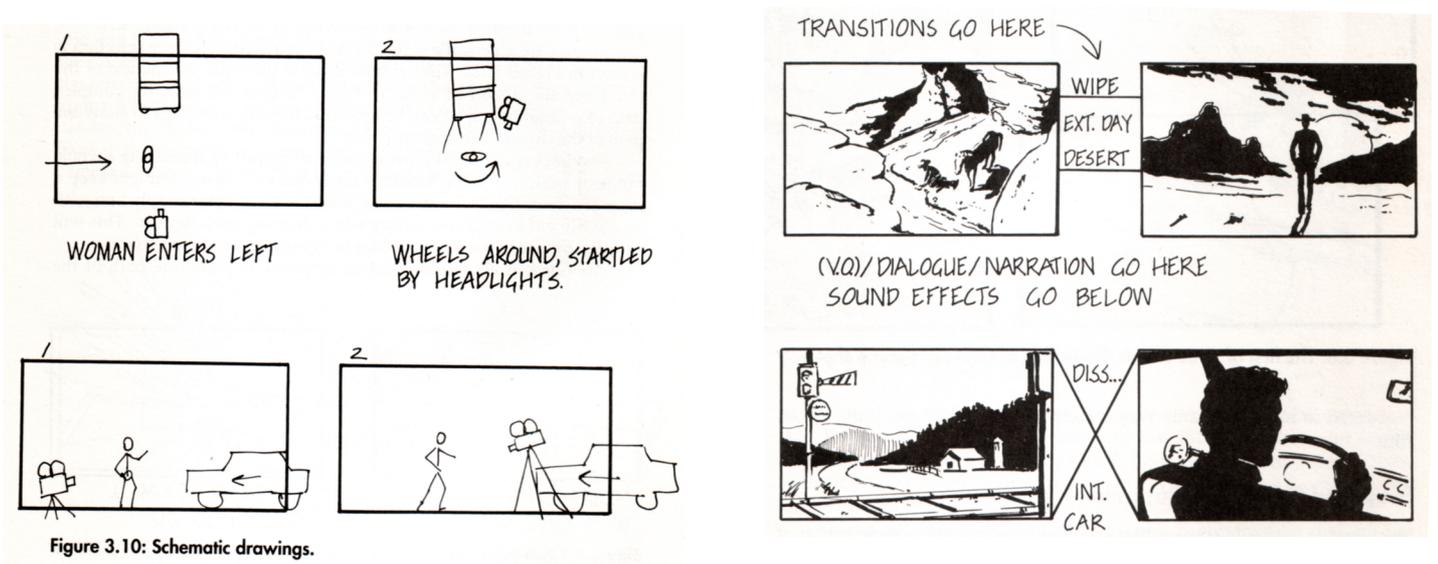
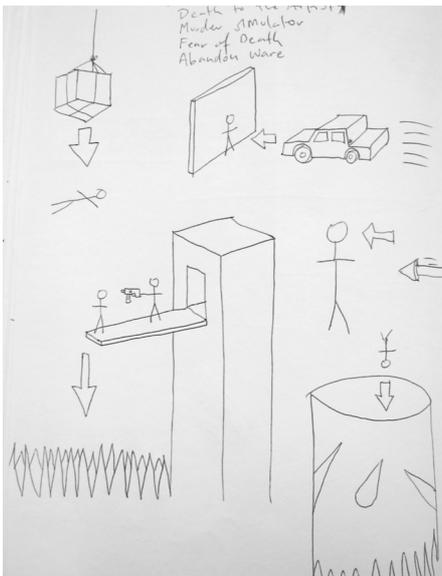
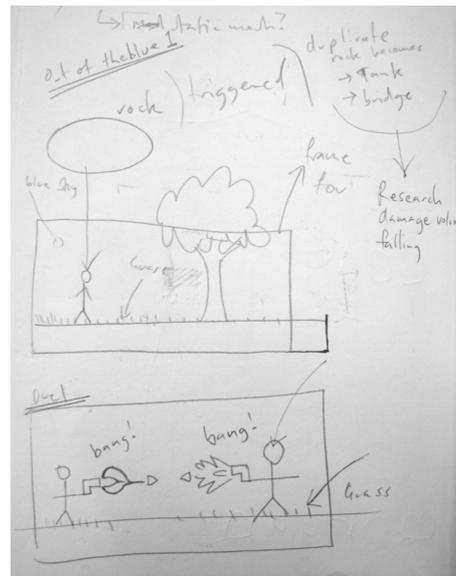


Figure 3.10: Schematic drawings.

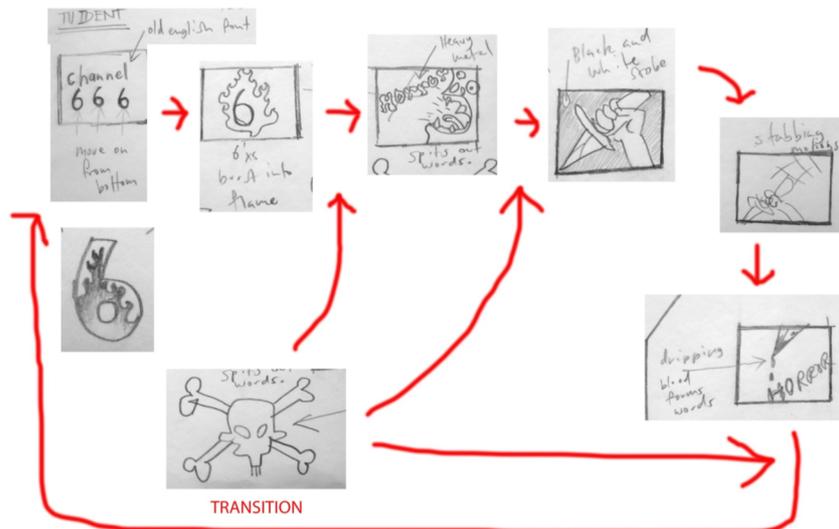


Sketches showing action for animation.

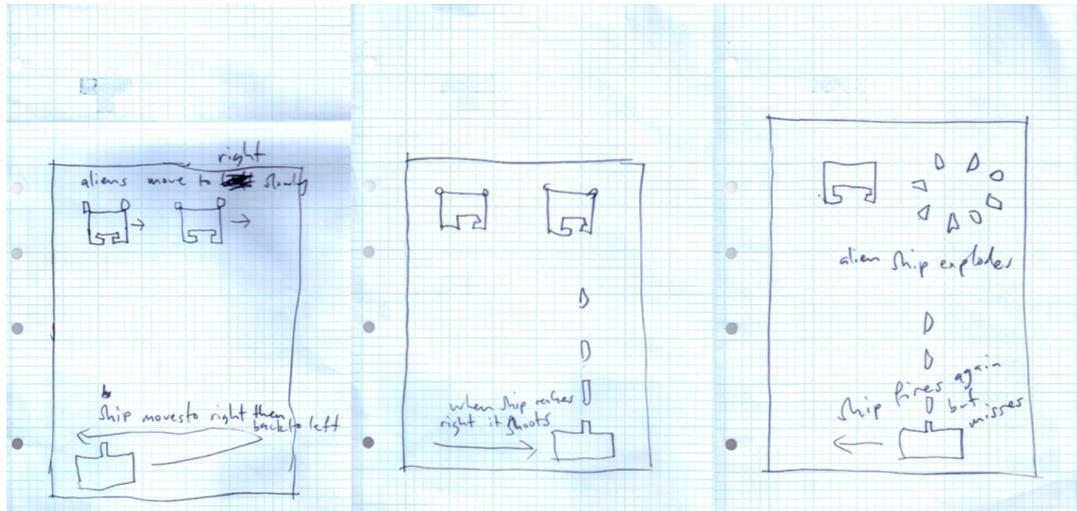


Sketches showing action for animation.

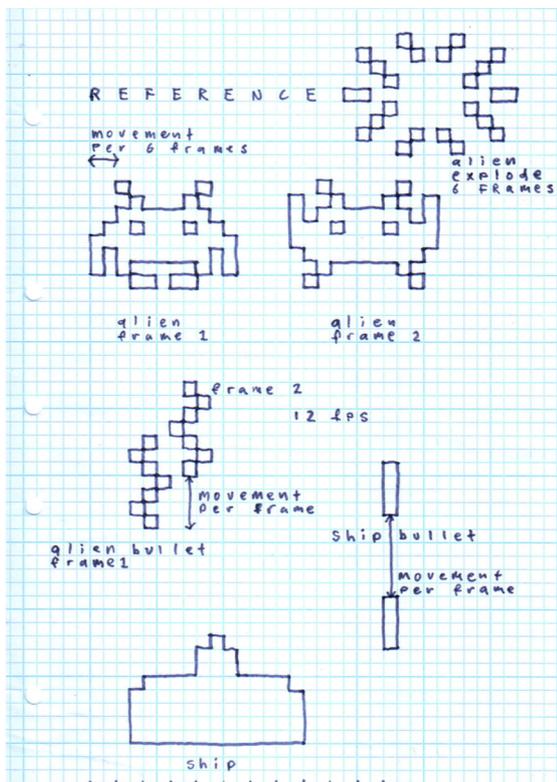
CHANNEL 666 TV IDENT STORYBOARD



Why use storyboards

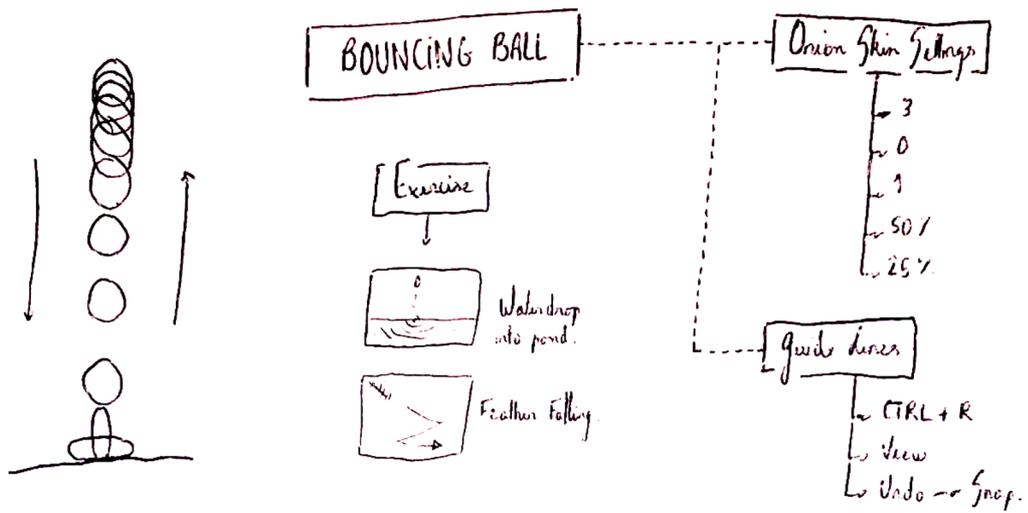


Short storyboard for post it note or graph paper animation.



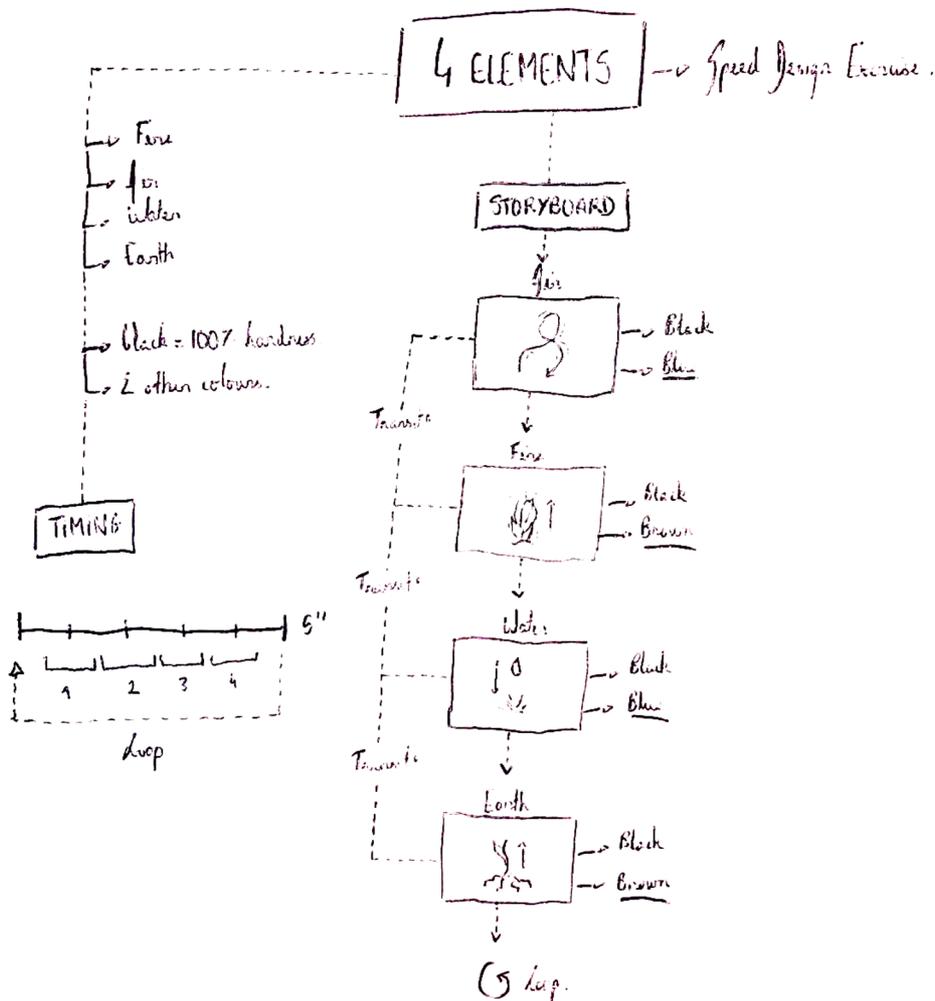
Reference drawing for post it note or graph paper animation.

Exercise 1



Exercise 2

Speed exercise - the 4 elements



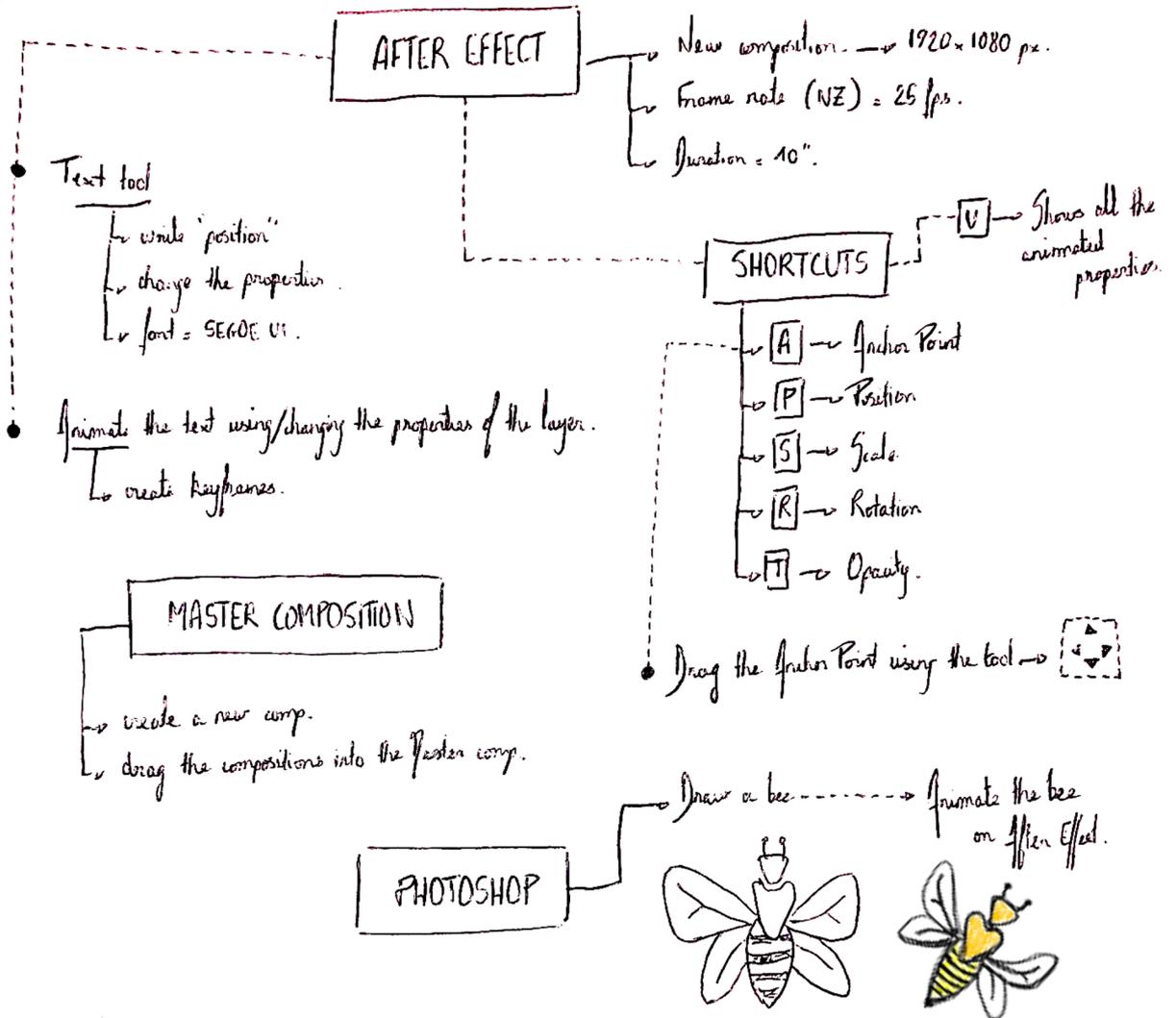
FIRE



EARTH

After effect

Text moving



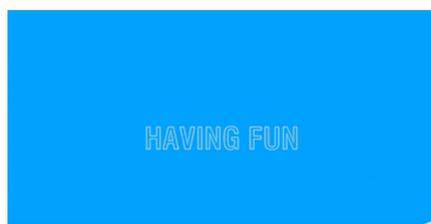
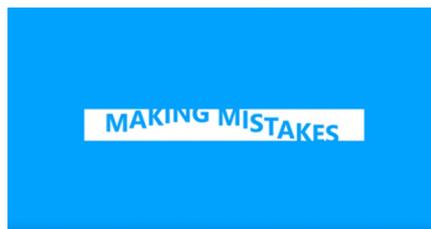
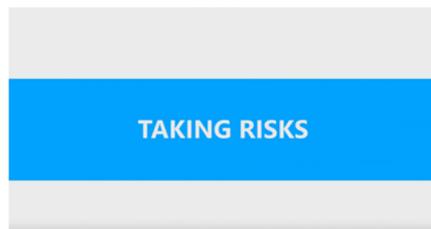
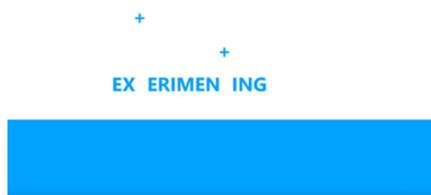
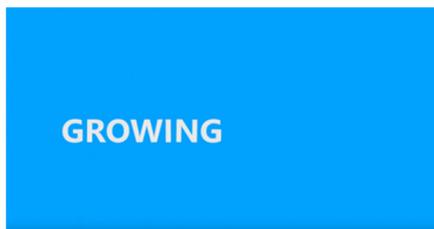
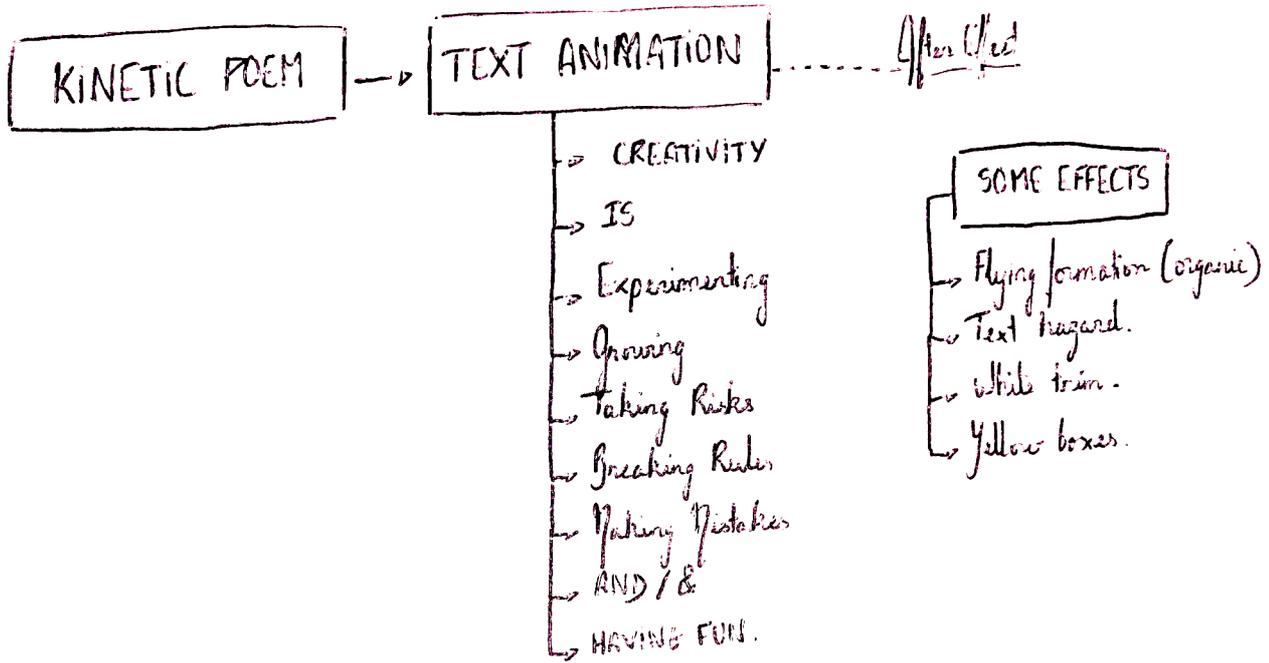
Inspirational Quotes.

- ↳ "A good teacher is like a candle - it consumes itself to light the way for others."
- ↳ "Show respect even to people who don't deserve it, not as a reflection of their character, but a reflection of yours."
- ↳ creativity is - experimenting /

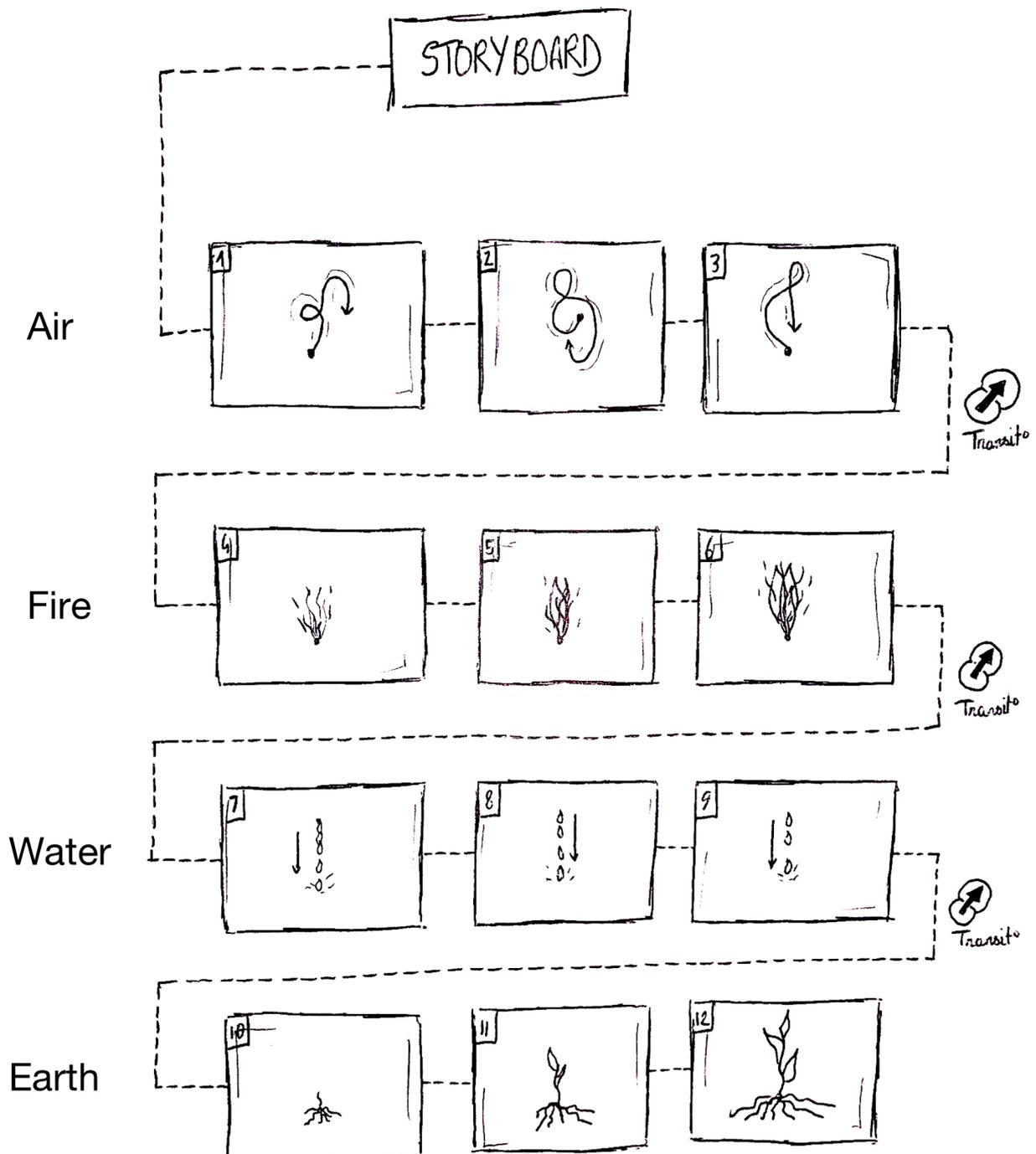
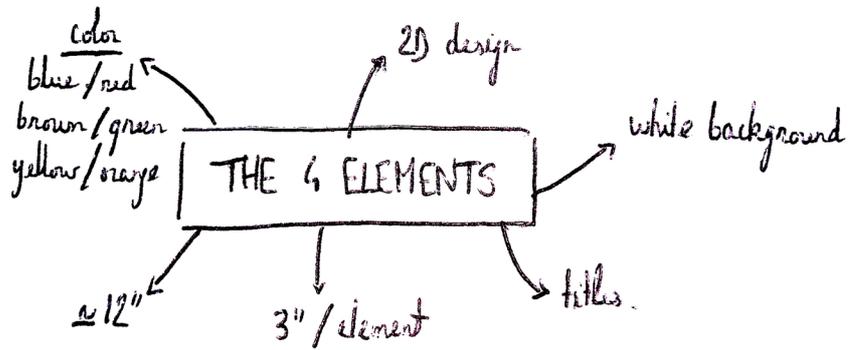
- growing
- taking risks
- ~~rules~~
- breaking rules
- ~~rules~~
- making mistakes
- ~~mistakes/factors~~
- & having fun.



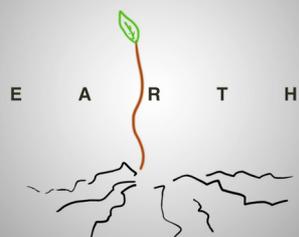
Text moving



The 4 Elements project



The 4 Elements project



Informations

Resolution : 1920x1080
Duration : 00'12"
Size : 7,3 Mo

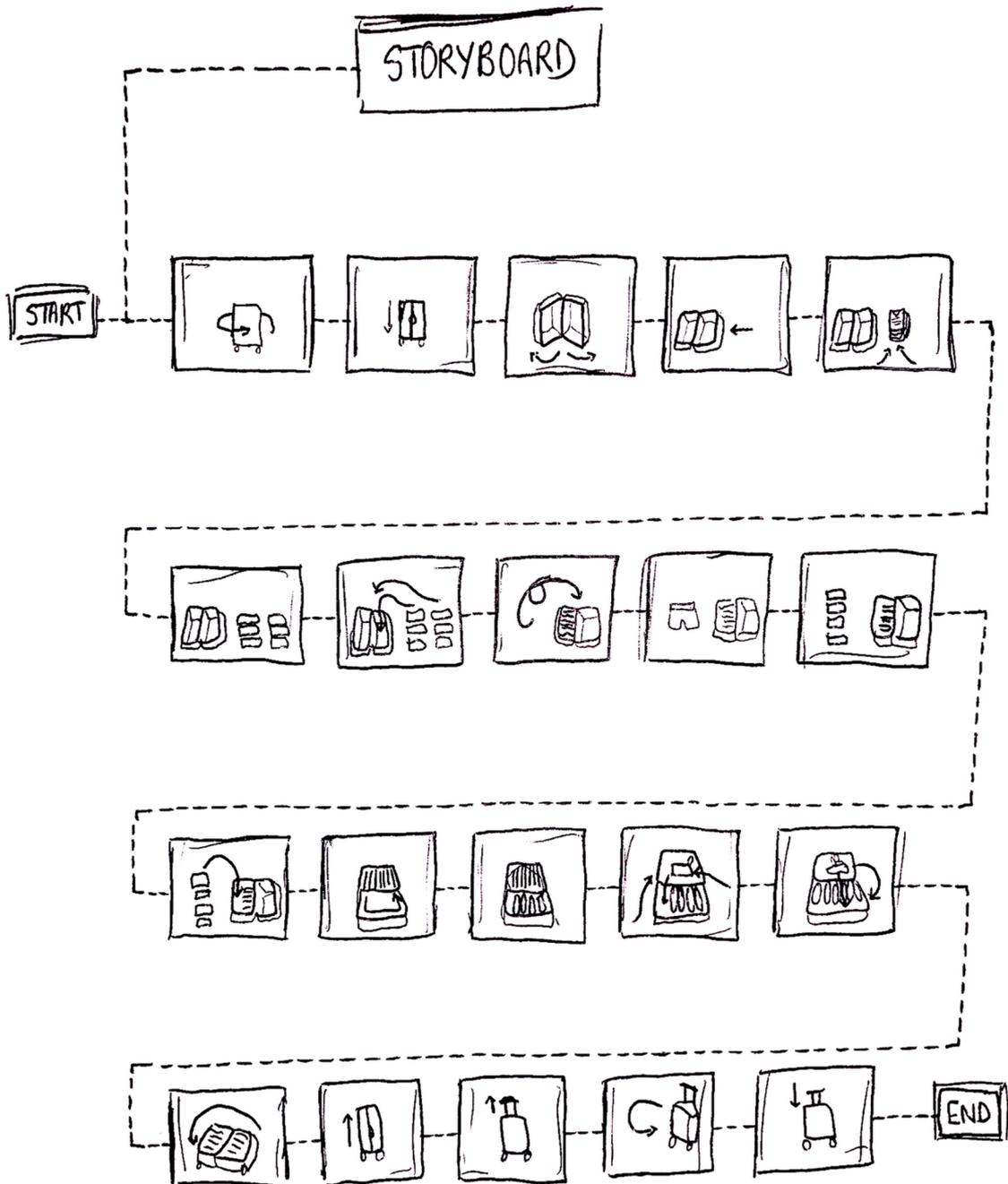
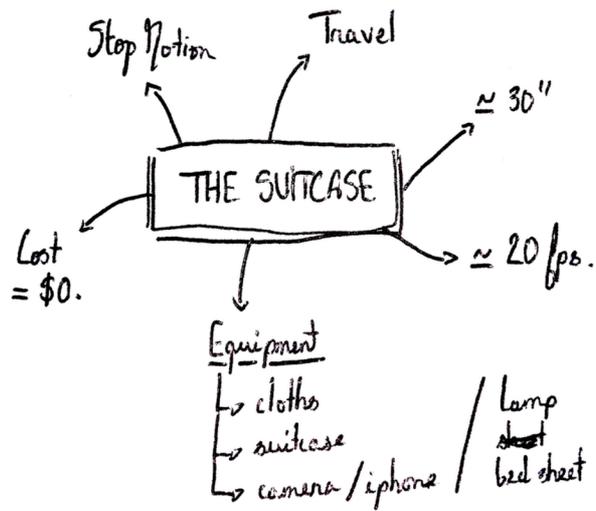
Drawing : Photoshop
Typography : After Effect

WATCH THE VIDEO



<https://youtu.be/4y9-22sckIU>

The Suitcase project



The Suitcase project

Grey bedsheet

Suitcase

Motivation

Lamp

Table + Smartphone



Informations

Resolution : 1920x1080

Duration : 00'52"

Size : 98,3 Mo

frames : 1029

fps : 19

cost : \$0

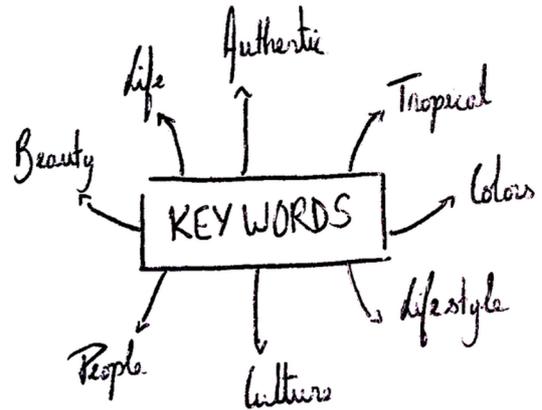
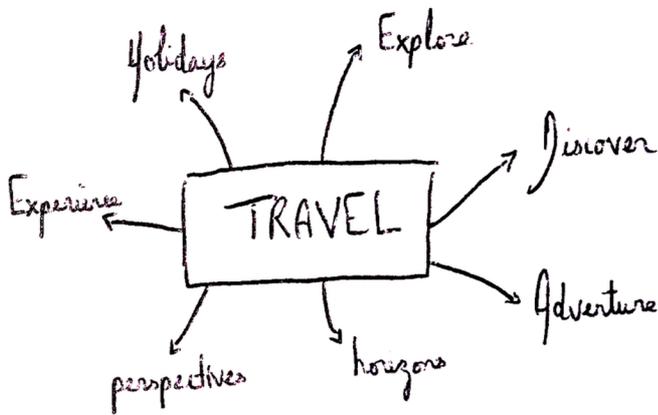
work : 6 hours



<https://youtu.be/lzT1jWb-nWY>



New Caledonia project



Background

DRONE FOOTAGE

These videos have been captured by myself in New Caledonia (2018)

Type of drone : DJI PHANTOM 4

2018

Moins de détails



DJI_0033.MOV



DJI_0036.MOV



DJI_0040.MOV



DJI_0041.MOV



DJI_0045.MOV



DJI_0049.MOV



DJI_0053.MOV



DJI_0057.MOV



DJI_0061.MOV



DJI_0070.MOV



DJI_0075.MOV



DJI_0079.MOV



DJI_0081.MOV



DJI_0082.MOV



DJI_0083.MOV



DJI_0084.MOV



DJI_0091.MOV



IMG_0961.MOV



IMG_1109.MOV



IMG_1329.MOV



IMG_1333.MOV

Location : ILE OF PINES

New Caledonia project



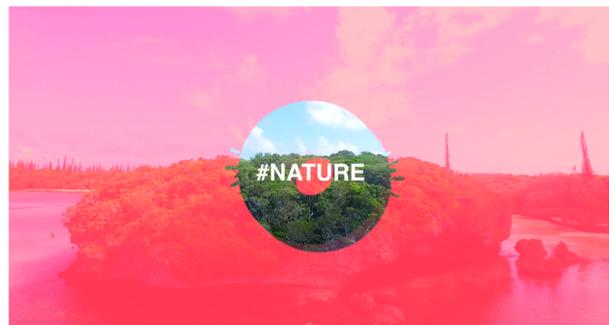
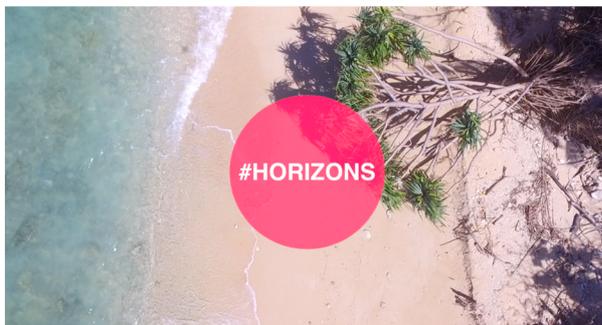
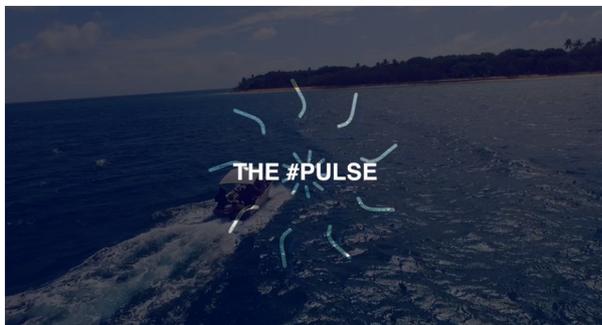
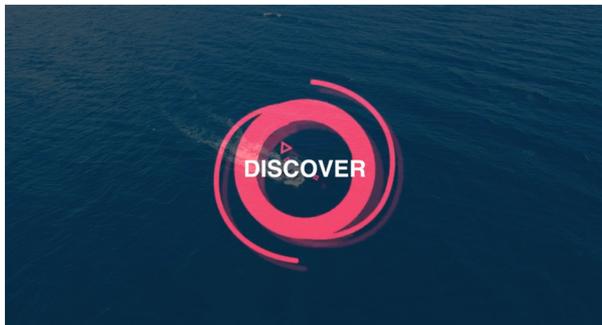
Informations

Resolution : 1920x1080

Duration : 02'22"

Size : 550,8 Mo

<https://youtu.be/lxhBsJHp2TQ>



Resources

How to import and export your animations using Photoshop

How to resize images in Photoshop using Automation

How to set up Keyboard Shortcuts for Next and Previous frames

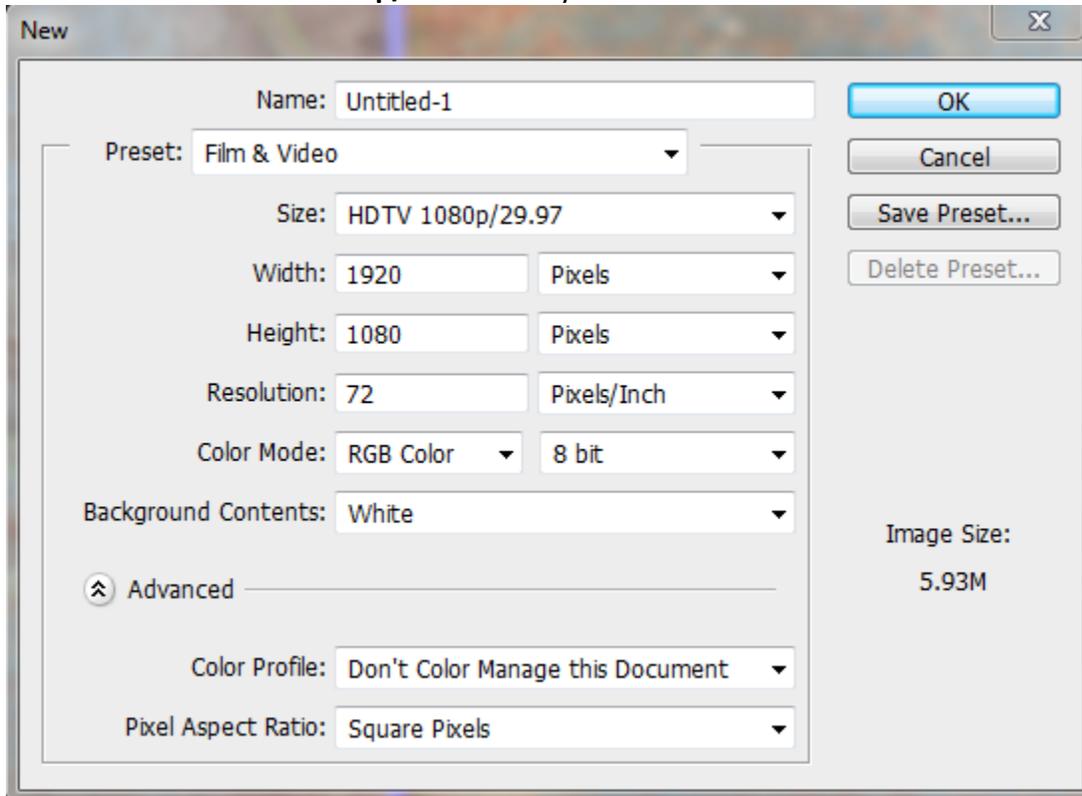
How to set up Photoshop for rotoscoping

How to set up Photoshop for traditional animation

How to batch rename files in Adobe Bridge

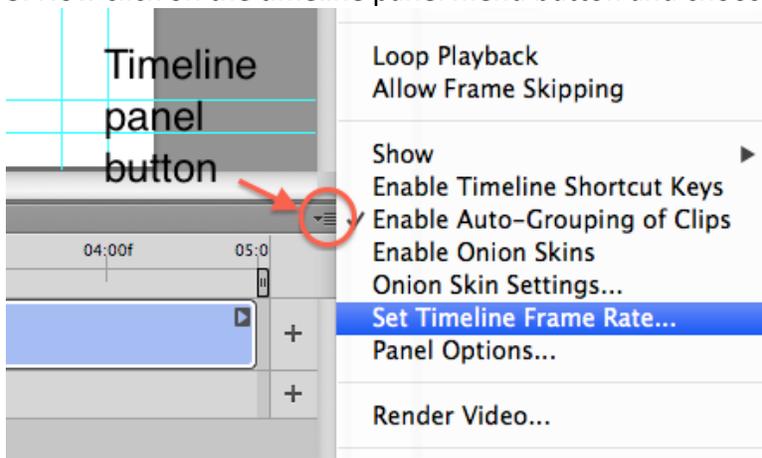
How to import and export your animation using Photoshop

1. Open Photoshop and go to **File > New**. Set the preset menu to **Film & Video**, and set the size menu to **HDTV 1080p/29.97**. Give your document a name and click OK



2. Now go to **Window > Timeline** to open the timeline panel. We need to create a dummy layer so that we can set the frame rate to 12. Do this by going to **Layer > Video Layers > New Blank Video Layer**.

3. Now click on the timeline panel menu button and choose **Set Timeline Frame Rate**.



4. Set the frame rate to 12 and click OK.

5. Now import your image sequence by going to **Layer > Video Layers > New Video Layer From File**. Browse for your image sequence and select just the first file in the sequence. Click Open.

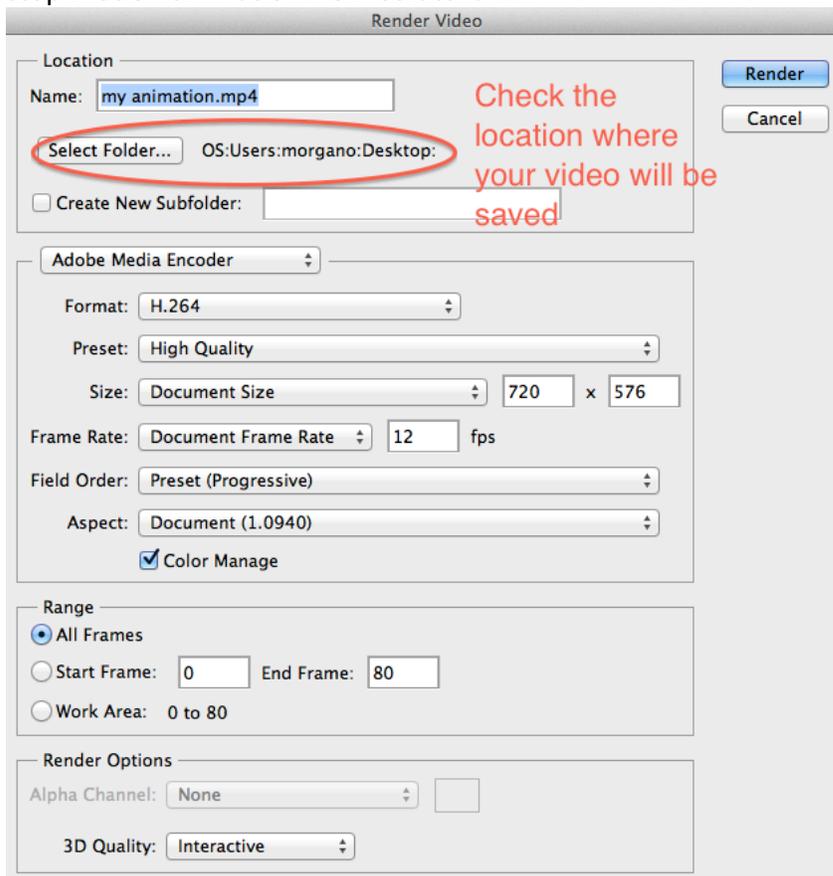
Your animation will now be in your timeline. Drag the time indicator or use the play controls to preview your animation.

If you need to brighten your animation go to **Layer > New Adjustment Layer** and choose Brightness and Contrast. Use the controls on this adjustment layer to brighten the animation.

Save your Photoshop document at this point.

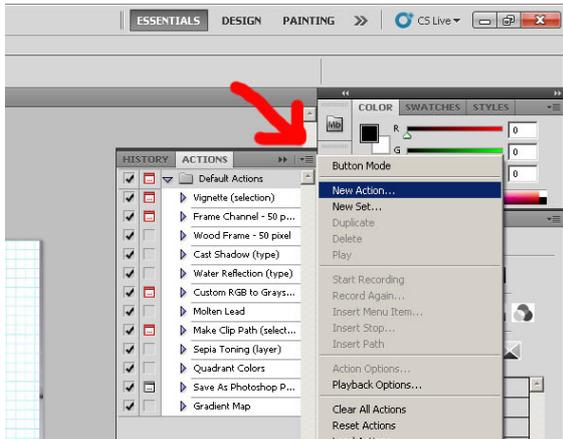
6. To export your animation as a video file and save it to your hard drive, go to **File > Export > Render Video**. In the dialogue window that appears make sure that in the Location area you have chosen an appropriate folder to save the video into.

Leave all the other settings alone and click Render. Congratulations on producing this stop motion animation from scratch!

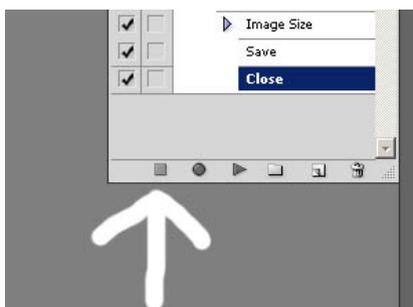


How to resize images in Photoshop using automation

1. Open Photoshop and open the first frame in your animation sequence.
2. Go to **Window > Actions** to open the actions panel.
- 3 In the top right corner of the actions panel is a small button. Click this to open the actions menu and choose **New Action**. In the New Action window that pops up click **Record**.



4. Now go to **Image > Image size** and in the pixel dimensions area, in the Width field type **1920** then click **OK**.
5. Now go to **File > Save**.
6. Now go to **File > Close**.
7. Now look at the bottom of the Actions panel and click the square stop recording button.

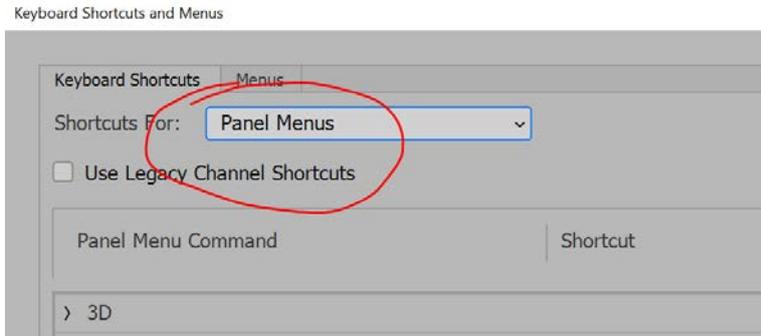


8. Now go to **File > Automate > Batch**. In the Batch window where it says Source Folder click on the Choose button and browse for the folder that contains all of your frames. Choose this folder then click OK in the Batch window.

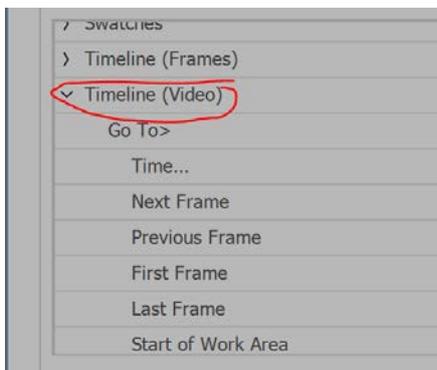
Photoshop will now open each image in that folder, resize it, save it then close it. Wait till it has finished then go through the Premiere worksheet.

How to set up Keyboard Shortcuts for Next and Previous frames

1. Once Photoshop is open, got to **Edit > Keyboard Shortcuts**.
2. In the window that opens, click the **Shortcuts For** menu and choose **Panel Menus**.



3. In the area below, scroll down until you find **Timeline (Video)** and click the arrow next to it.



4. Click **Next Frame** in the list to select it, and then press **F6** on your keyboard. You will get a warning but click the **Accept** button anyway. Now click **Previous Frame** in the list, and press **F5** on the keyboard, again click the **Accept** button. Finally click the **OK** button.



You can now use the **F5** and **F6** keys to move the Time Indicator backwards and forwards one frame at a time.

How to set up Photoshop for rotoscoping

1. Create a new document in the same way we have before at 1920 px wide and 1080px high.
2. Go to Window > Timeline, create a video timeline and set the timeline framerate to 12fps.

NOTE: There is a guide on moodle (How to set up Photoshop for animation) which explains the above process in detail. Please use it if unsure about these steps, It is important to get this part right.

3. Go to Layer > Video Layers > Add Video Layer From File. Browse for the video on your harddrive and open it.
4. Your video will now appear in your timeline. Rename this layer to 'video'. Use the Move tool to position the video where you want. You can also scale the video larger or smaller. To do this click Show Transform Controls in the options area at the top when using the Move tool, this will show the handles around the video. Start dragging a corner handle and click OK in the window that pops up. The video may go white, don't worry. When you have scaled the video press enter to apply the change.
5. Now create a new video layer to animate on by going to Layer > Video Layers > Create Blank Video Layer. Make sure this new layer is above the previous layer and name it 'animation'. Drag it up in the layers palette NOT the timeline.
6. Now you are ready to animate on the 'animation' layer over the top of the video layer!

TIPS:

- You might want to reduce the opacity of the 'video' layer to about 75% so that you can see what you are drawing more clearly.
- It's a good idea to lock the 'video' layer once you have it set up so that it can't be moved accidentally. You also only want to draw on the 'animation' layer so that you can delete the 'video' layer later if you wish to.
- Remember to set your brush to 100% hardness.
- You don't have to start animating on frame one of the timeline. Move the time marker to an interesting point in the video and start drawing there. You can render a section later using the work area bar.
- Draw quickly, and don't be tied down to all the detail.
- Add your own elements! Use your imagination!
- Draw in black and white, but add a splash of colour for impact every now and then.
- Save your work often!

How to set up Photoshop for traditional animation

1. Open Photoshop and go to **File > New**. In the New Document dialogue set the units to pixels and the width to 1920 and the height to 1080. Leave the resolution as is. Click Create.
2. Go to **Window > Timeline** to open the timeline. Click the Create Video Timeline button in the center of the timeline.
3. Click the panel menu button in the top right corner of the timeline and choose **Set Timeline Frame Rate...** In the window that pops up set the frame rate to 12.



Panel menu button

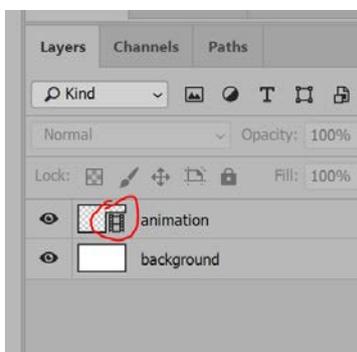
4. Slide the zoom slider at the bottom of the timeline roughly to the middle so you can see the layer clearly.



5. Create a video layer by going to **Layer > Video Layers > New Blank Video Layer**. Rename the bottom layer by double clicking its name in the Layers panel. Call it "background". Rename the video layer "animation". Your timeline should look like this:



NOTE: Video layers are light blue and static layers are purple. Also look at your animation layer in the Layers panel. Note that it has a filmstrip icon in the thumbnail.

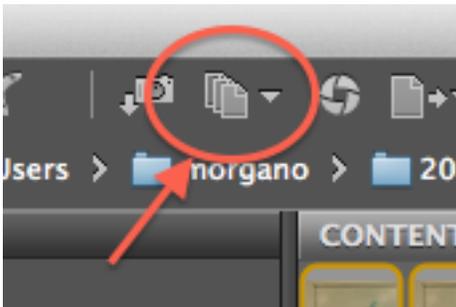


How to batch rename files in Adobe Bridge

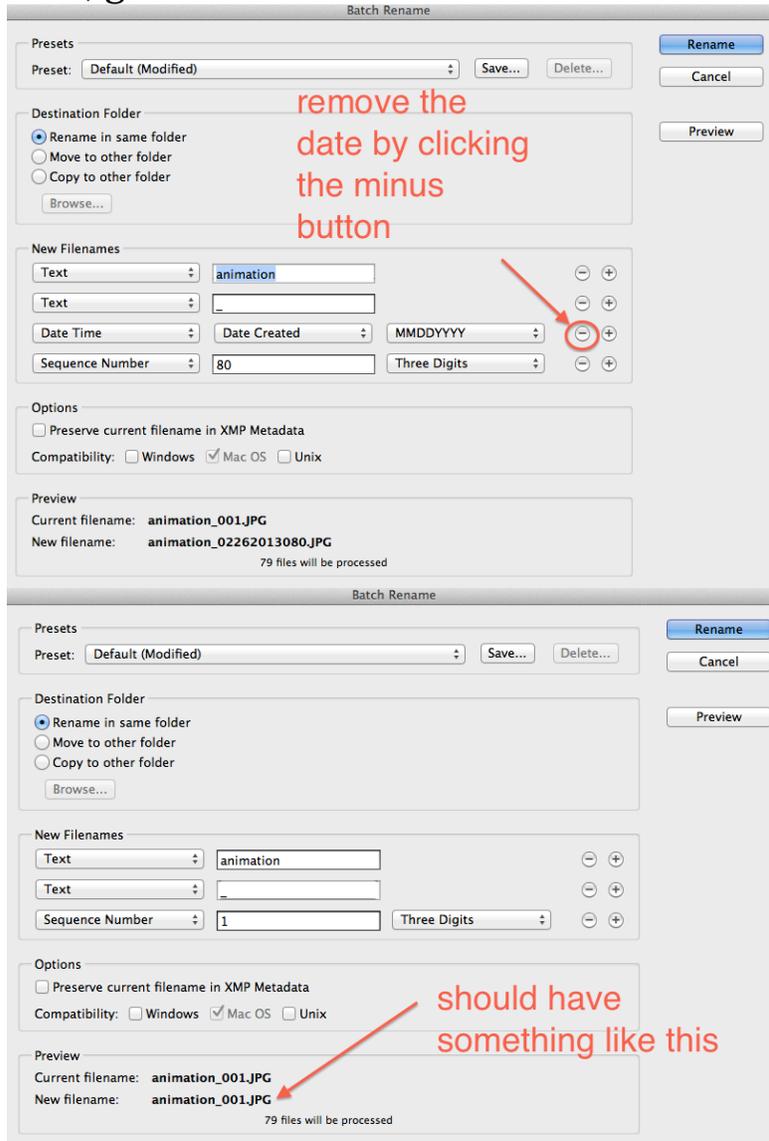
1. Open Adobe Bridge
2. Browse for image sequence using file browser at the left of the screen
3. Once you can see your images in the content pane, slide the zoom slider all the way to the left.



4. Select all images in the content area by dragging a selection box over them. Make sure they are all selected.
5. Click and hold the Refine button and choose Batch Rename



6. Set up file name with appropriate information. Remove the date, give it a new name and set the number of digits.



7. Click the Rename button