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HND / BA COMPUTER GAMES DESIGN / ANIMATION & VFX

EVOLVING YOUR CREATIVE CRAFT

3D Reference Images



3D Reference Images

Lecture Contents

- ① Overview
- ② Orthographic Images as References
- ③ Reference Image Setup for Maya



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3D Reference Images

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Overview

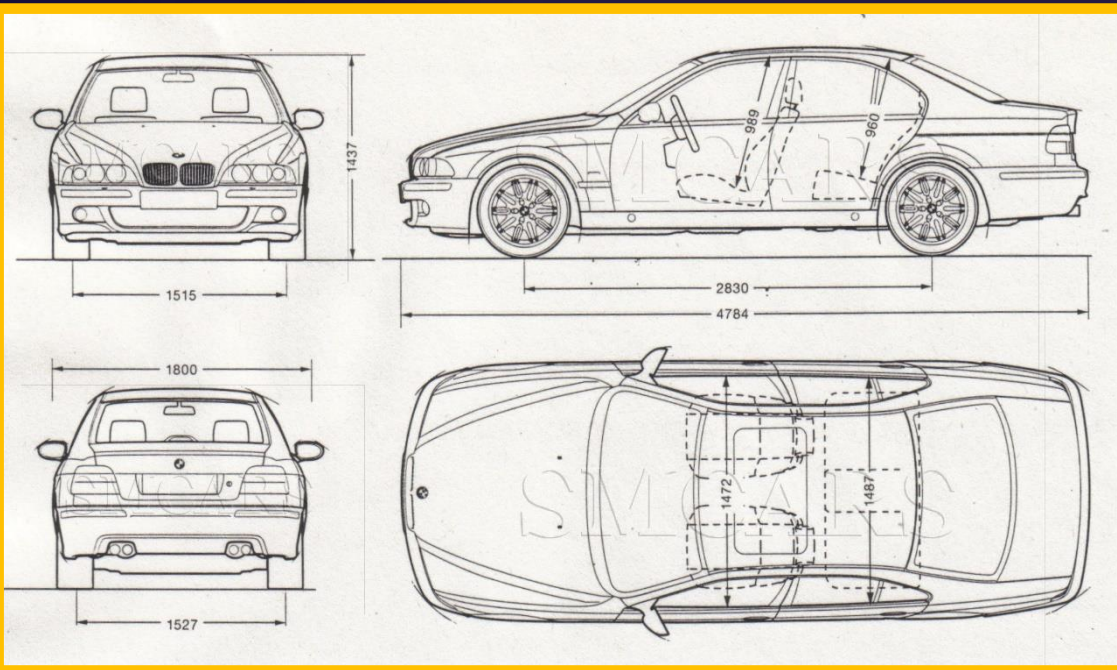


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3D Reference Images

OVERVIEW

As part of the 3D modelling process, **references can be used as a guide** to help you produce more accurate assets. **Orthographic images are often the best source** of reference for 3D modelling.



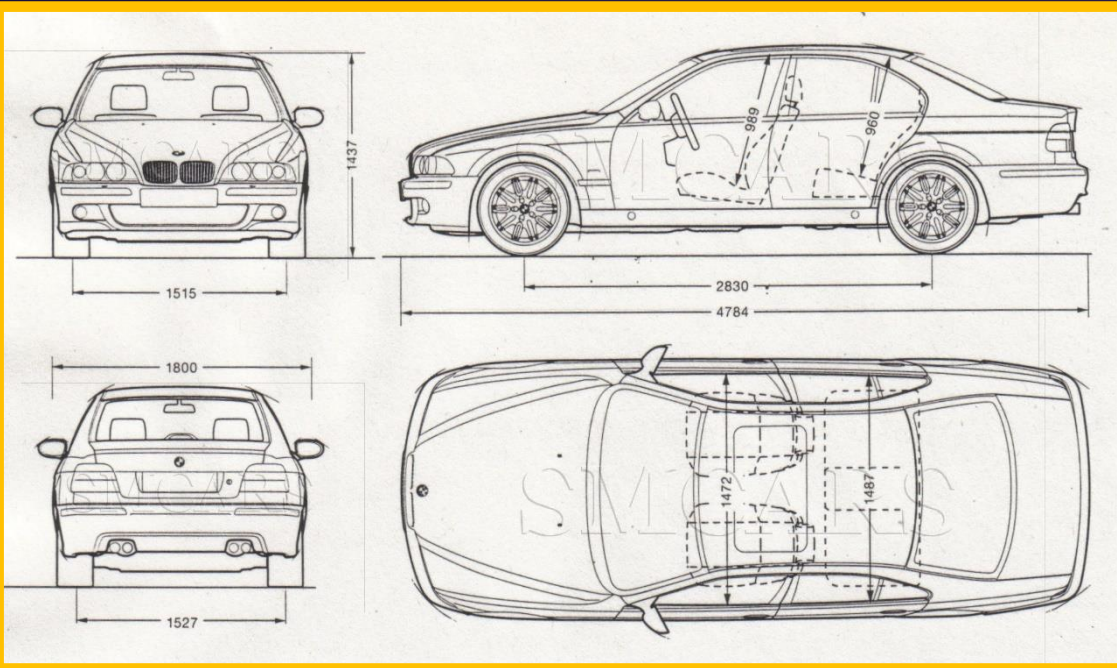


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OVERVIEW

Reference images are **typically used for props based on real-world designs** but can **also be used with bespoke or fictional creations** in order to maintain consistency between 2D concepts and 3D models.





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OVERVIEW

Advantages of using reference images:



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OVERVIEW

Advantages of using reference images:

- Improving **scale accuracy**



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OVERVIEW

Advantages of using reference images:

- Improving **scale accuracy**
- Better planning in the modelling process with **topology**



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OVERVIEW

Advantages of using reference images:

- Improving **scale accuracy**
- Better planning in the modelling process with **topology**
- **Closer resemblance** to your concept designs (or the designs of other concept artists)



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OVERVIEW

Advantages of using reference images:

- Improving **scale accuracy**
- Better planning in the modelling process with **topology**
- **Closer resemblance** to your concept designs (or the designs of other concept artists)
- Can **speed up** the overall modelling process



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Orthographic Images as References



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ORTHOGRAPHIC IMAGES AS REFERENCES

In order to make use of orthographic images as references **they need to be imported** into a 3D workspace.

For this exercise we will be using **Autodesk Maya** to achieve this.

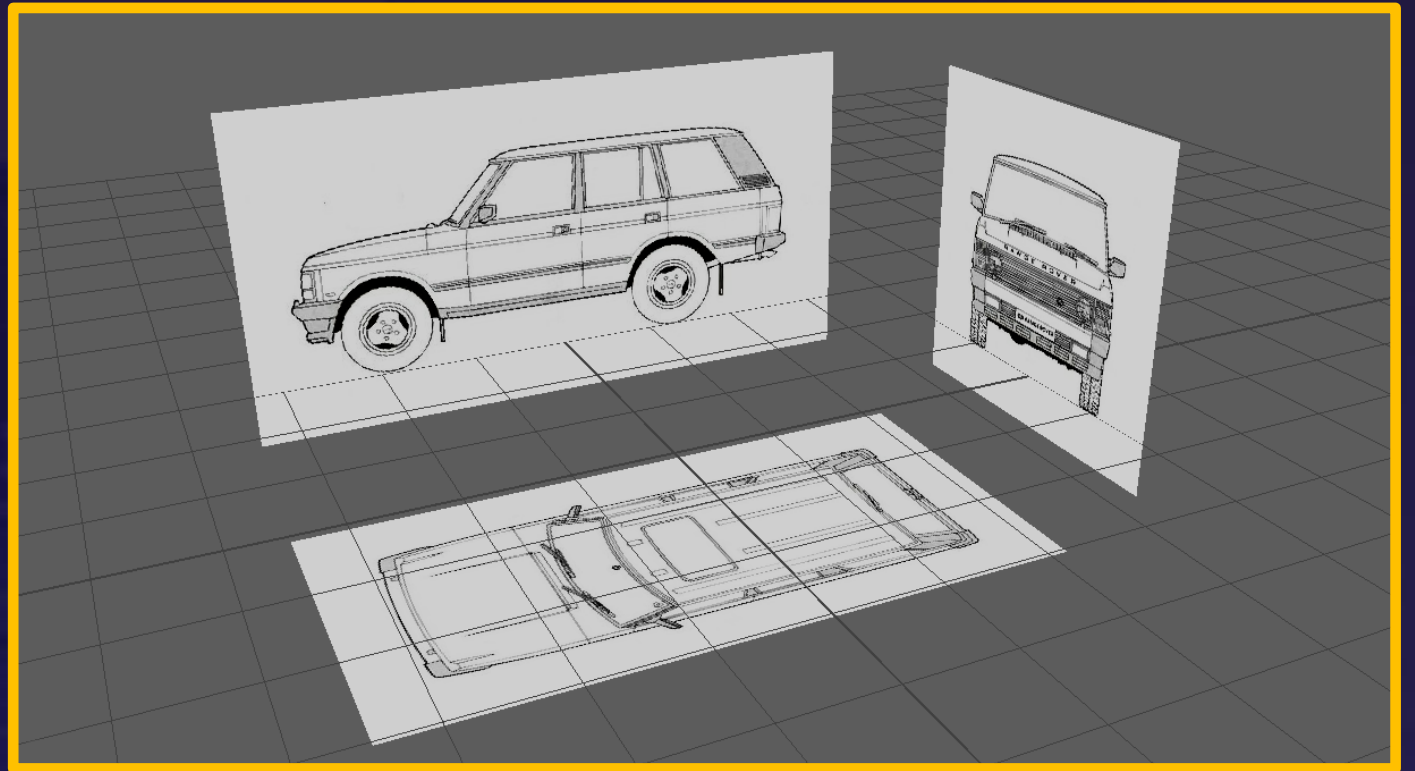


ORTHOGRAPHIC IMAGES AS REFERENCES

To maximise the efficiency of using reference images, **three images** from **different perspectives** need to be used.

Typically, we will need to see an object from these views:

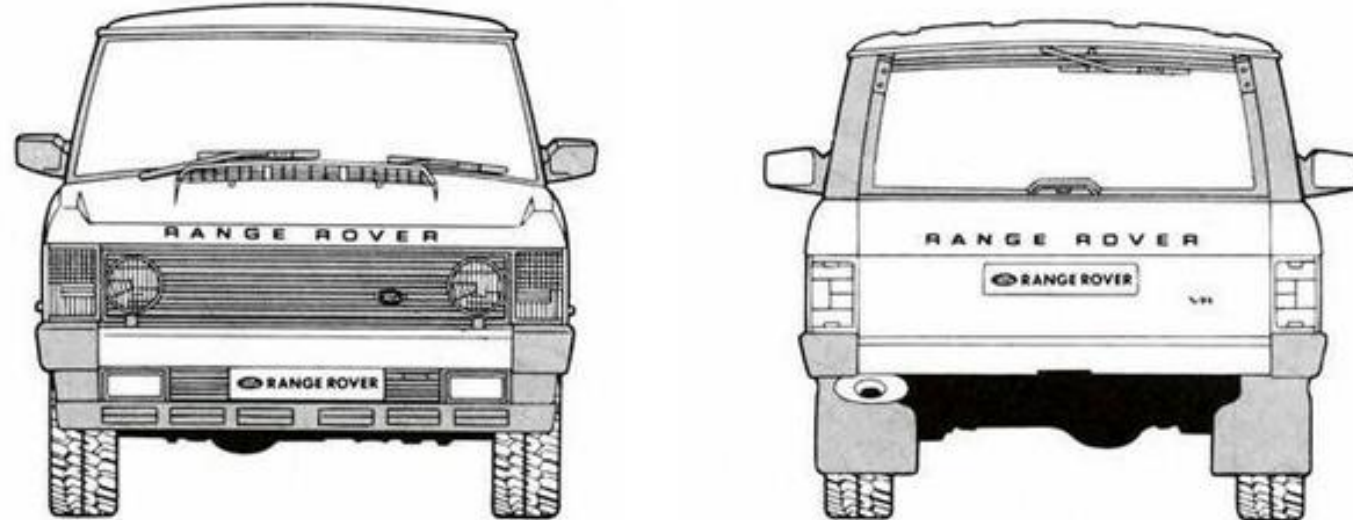
- Top View
- Side View
- Front View





ORTHOGRAPHIC IMAGES AS REFERENCES

Sometimes rear views are also produced if they are distinctly different from a front view.

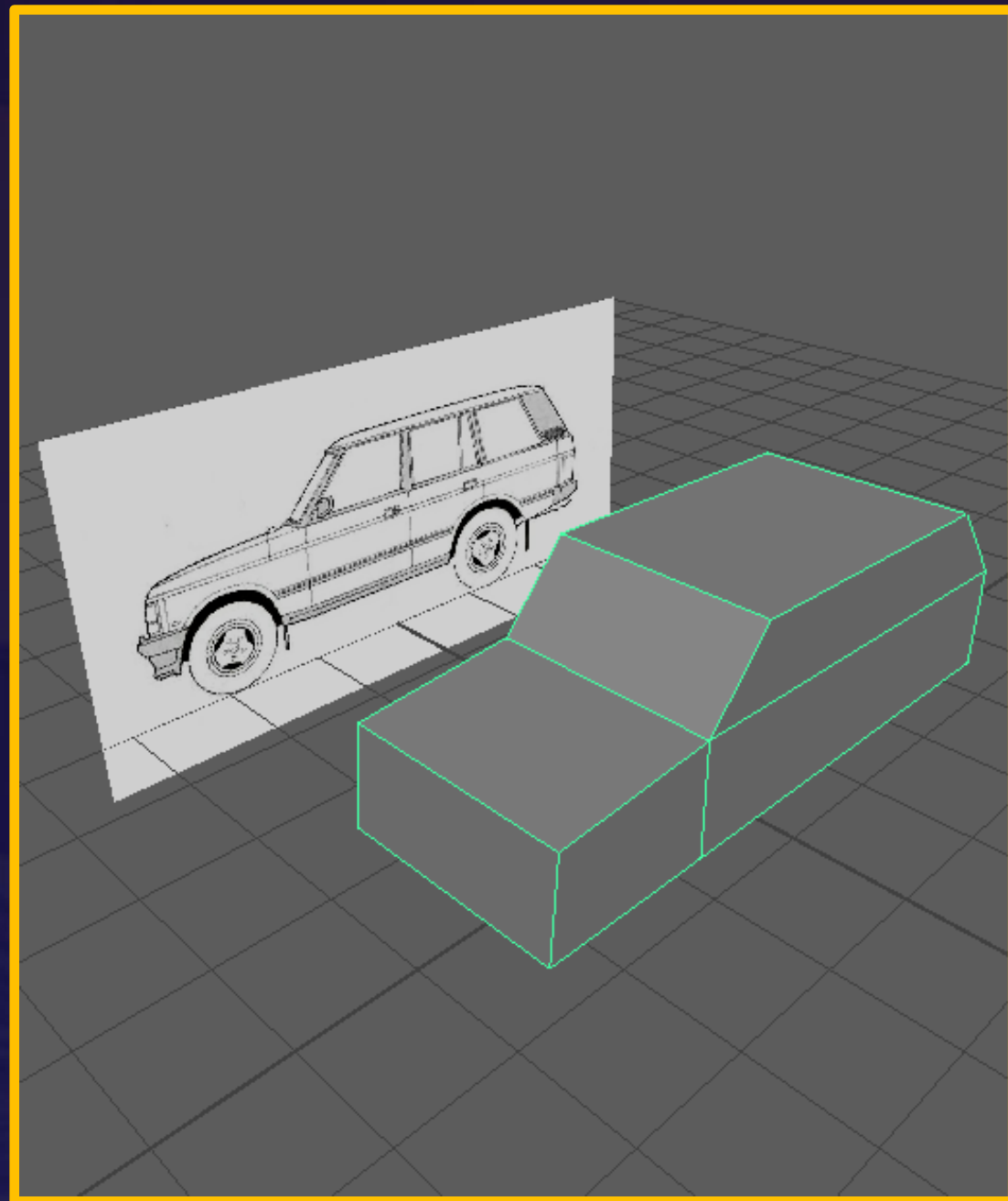




ORTHOGRAPHIC IMAGES AS REFERENCES

This is why we produce orthographics – to give us references for **multiple viewpoints**.

A single image is often not enough **as this will not provide you with enough information** for missing details.



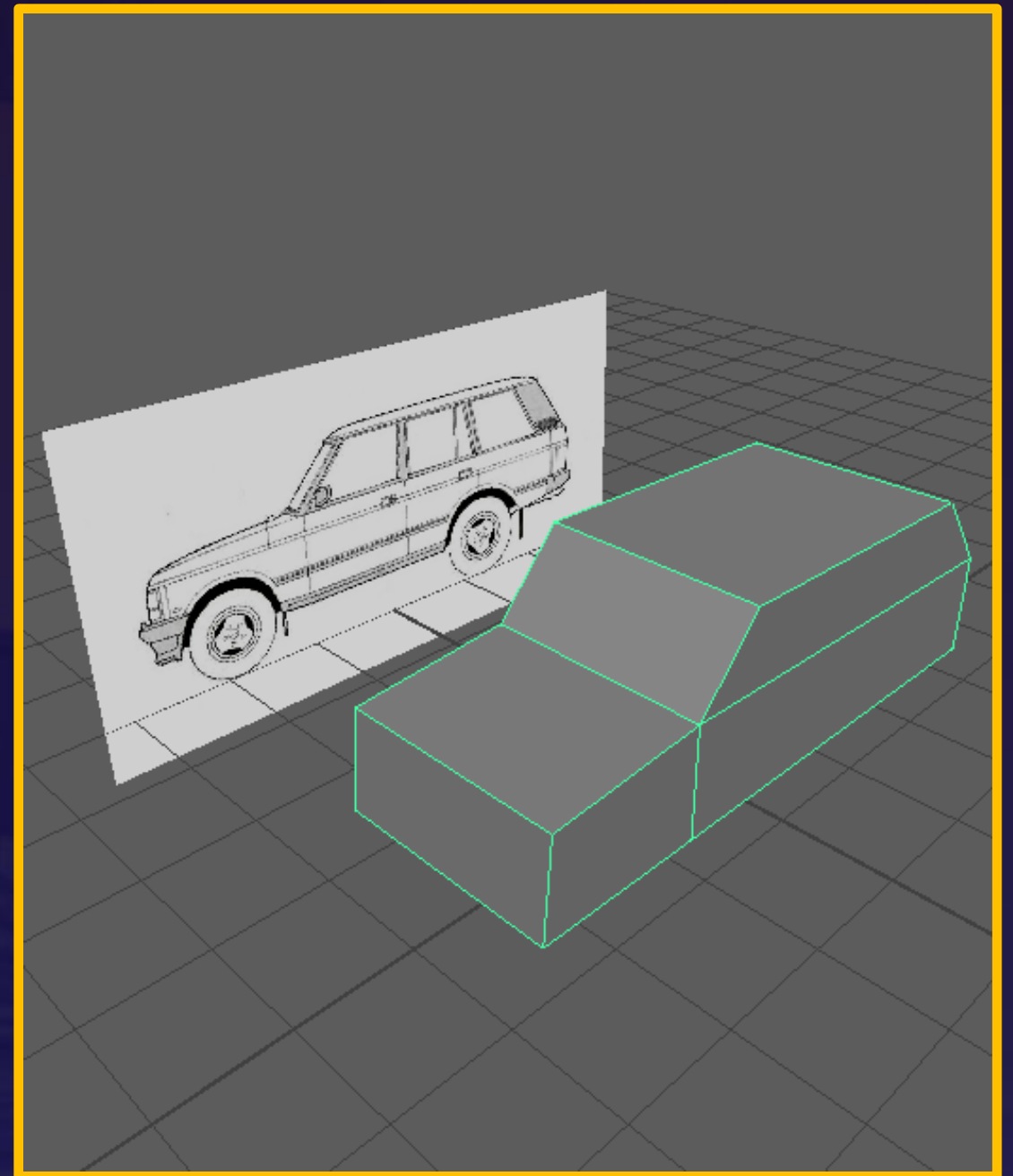


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3D Reference Images

ORTHOGRAPHIC IMAGES AS REFERENCES

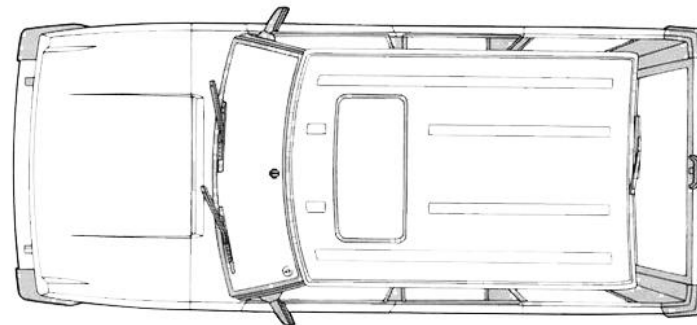
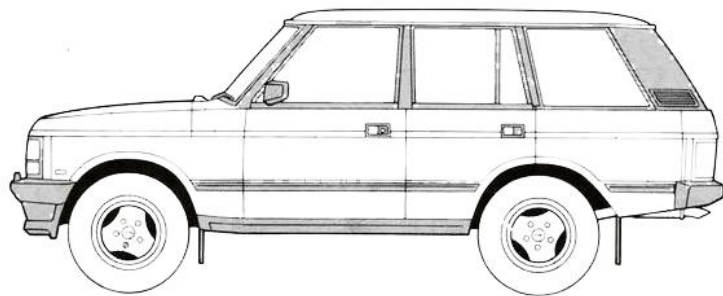
Without visual guides it is **far more difficult** to accurately model the rest of your design.





ORTHOGRAPHIC IMAGES AS REFERENCES

For the assessment only **three scaled views** are required (side / top / front), but if you choose to produce additional references feel free to do so.





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Reference Image Setup for Maya



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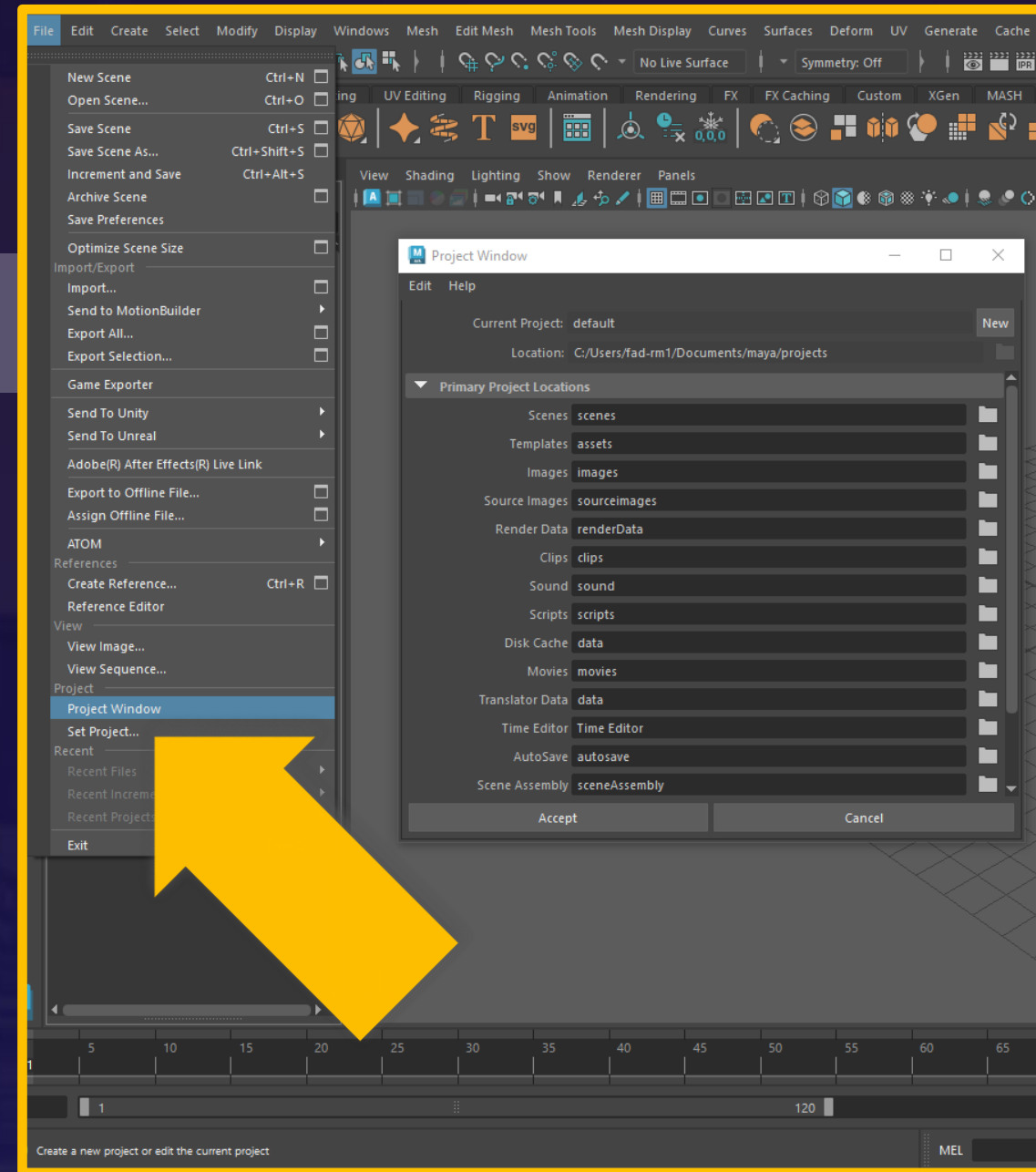
REFERENCE IMAGE SETUP FOR MAYA

Step 1

Start Maya and **create a new Maya Project.**

The project is important as this will **create a folder structure** that you will need to store your reference images.

Without this your references will 'break' if you try to move your save files.





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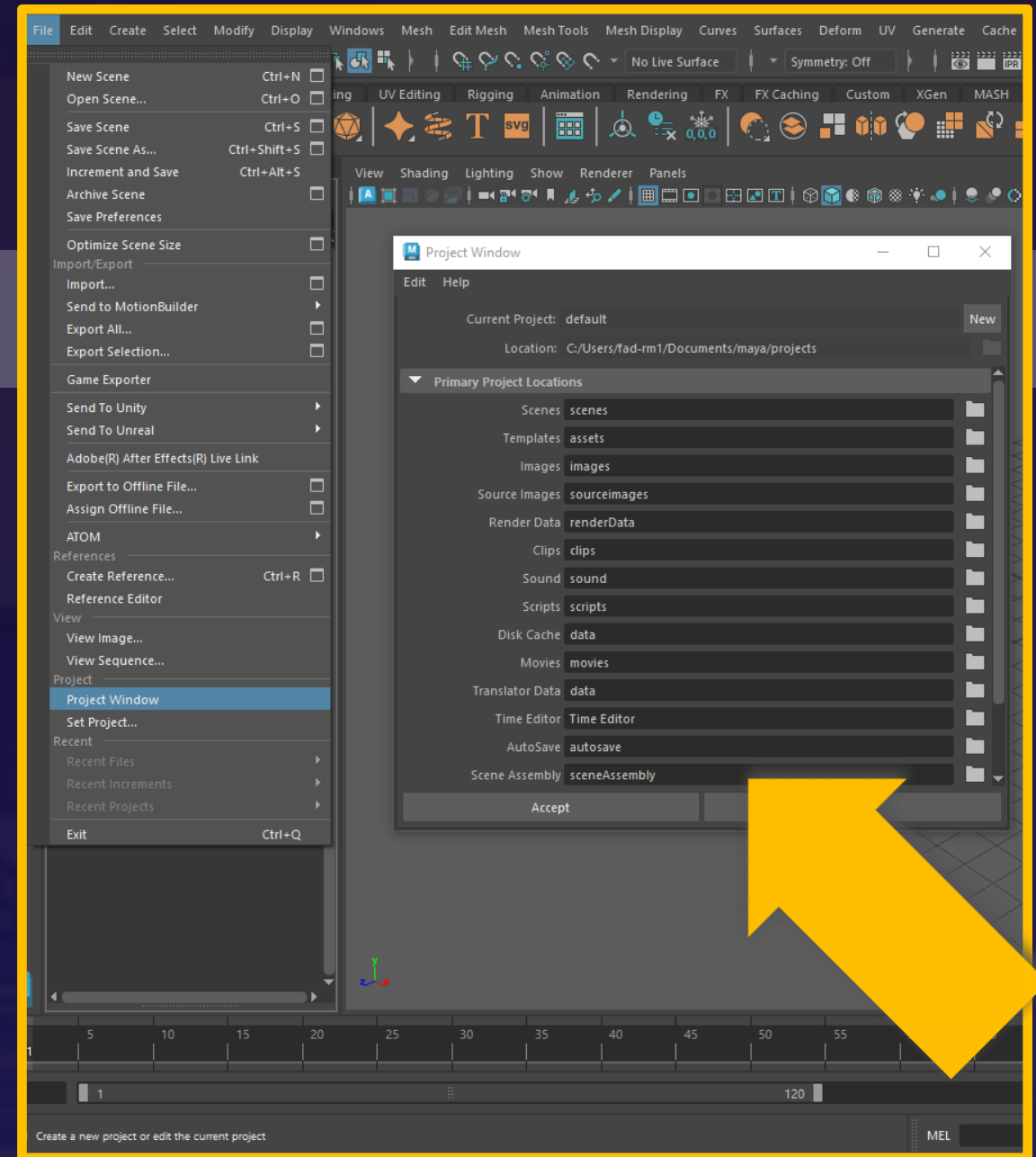
3D Reference Images

REFERENCE IMAGE SETUP FOR MAYA

Step 1

Keep the default folder and structure names. Only the actual project needs to be renamed.

This is easier generally and is **important for clarity** in this tutorial.





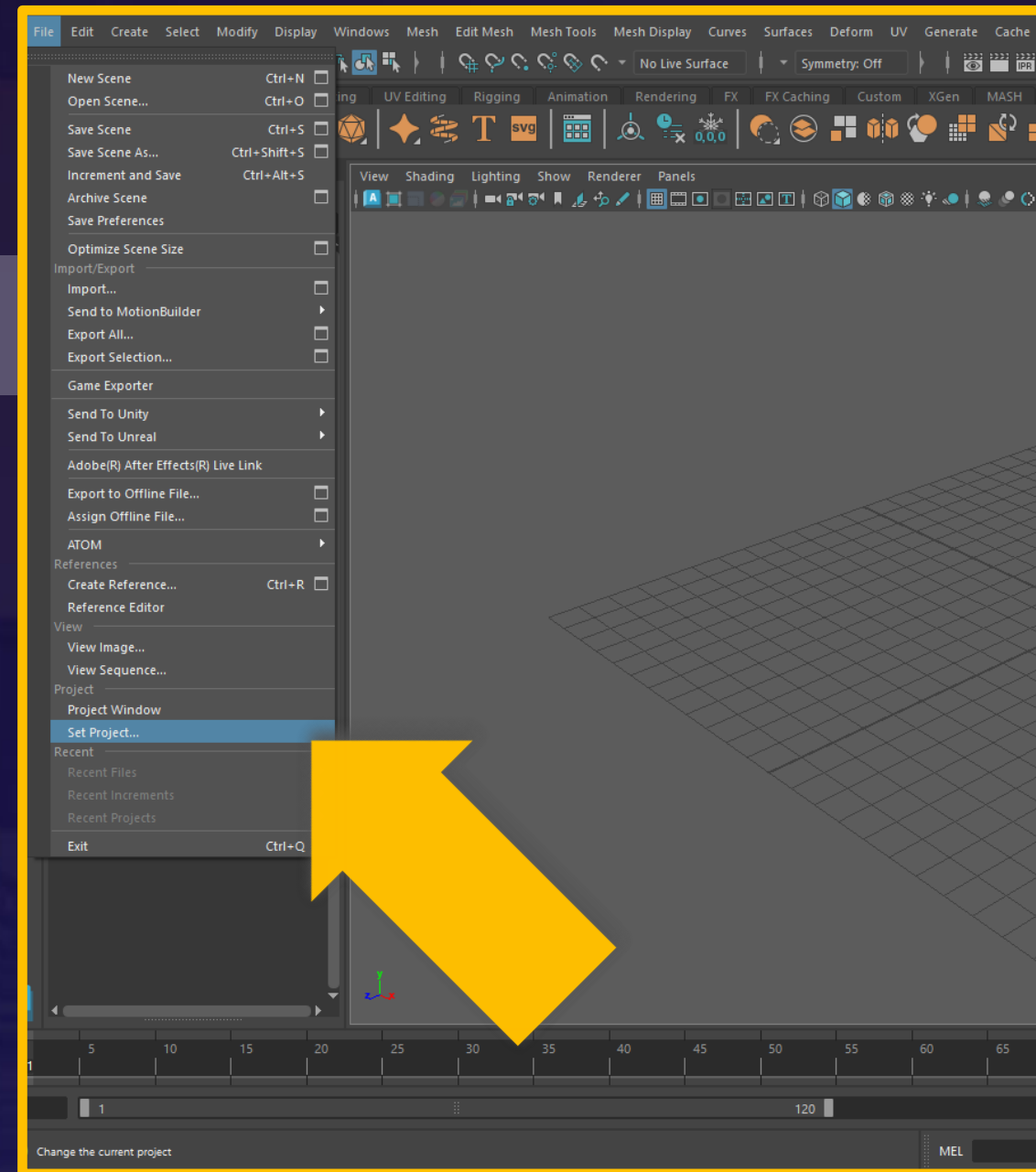
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3D Reference Images

REFERENCE IMAGE SETUP FOR MAYA

Step 1

Now **Set the project** and **save your scene** before progressing.





REFERENCE IMAGE SETUP FOR MAYA

Step 2

Visit **Moodle** and navigate to the **Evolving Your Creative Craft - Resources** section on the **ECC Module** page.

Download the following example images:

ECC_REF_RR_side

ECC_REF_RR_front

ECC_REF_RR_top



Evolving Your Creative Craft - Resources

Resources for Tutorial Sessions can be downloaded from here.



ECC - 3D Reference Images (Range Rover)

Reference Images used for the exercise of the **ECC - 3D Reference Images** presentation
(ECC_REF_RR_side / front / top)



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3D Reference Images

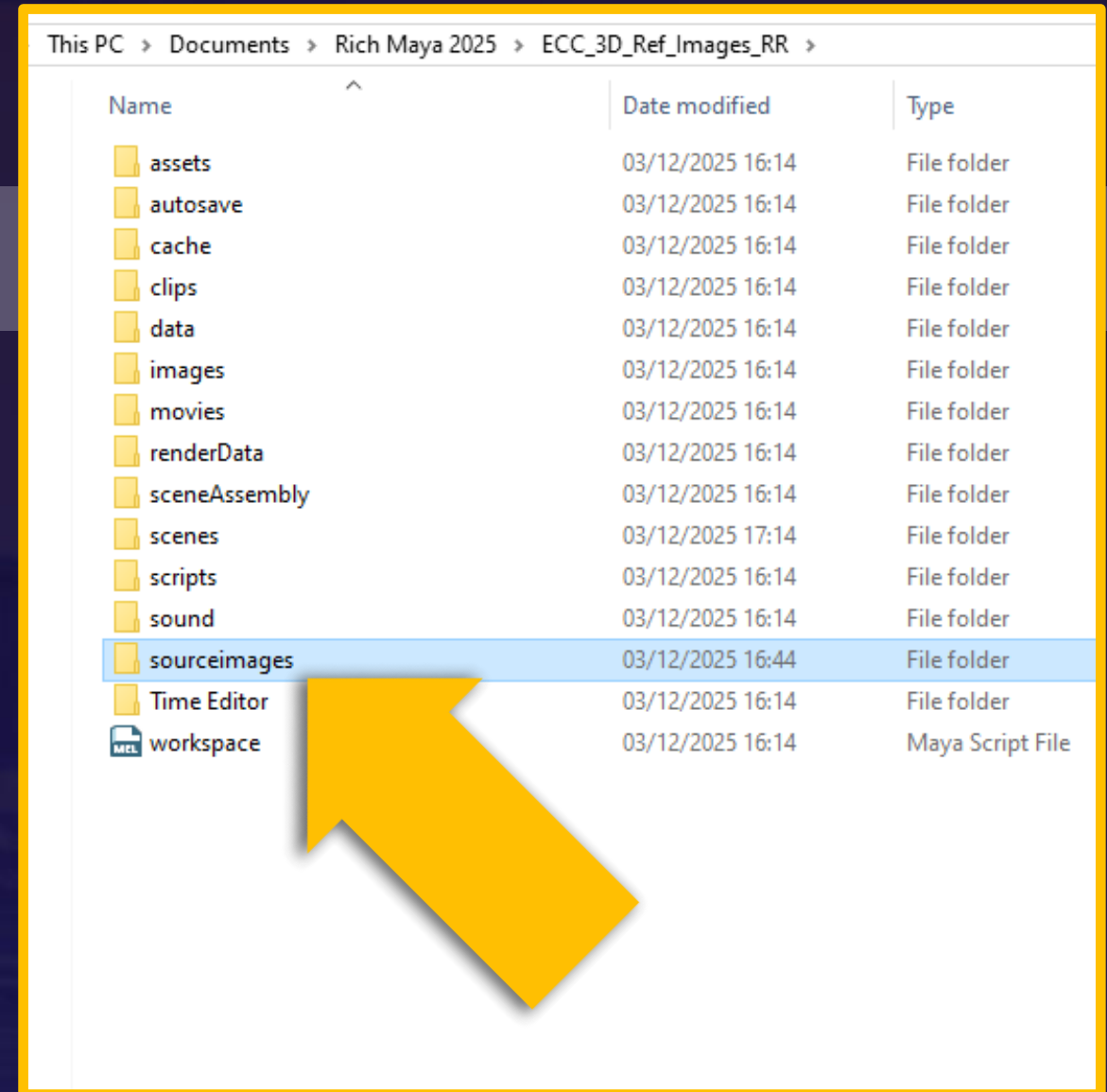
REFERENCE IMAGE SETUP FOR MAYA

Step 3

Navigate to your **Maya PROJECT** location
(do this **OUTSIDE** of Maya).

Copy your reference images into the
Sourceimages folder.

This will be the default location Maya will
look to for reference image imports.



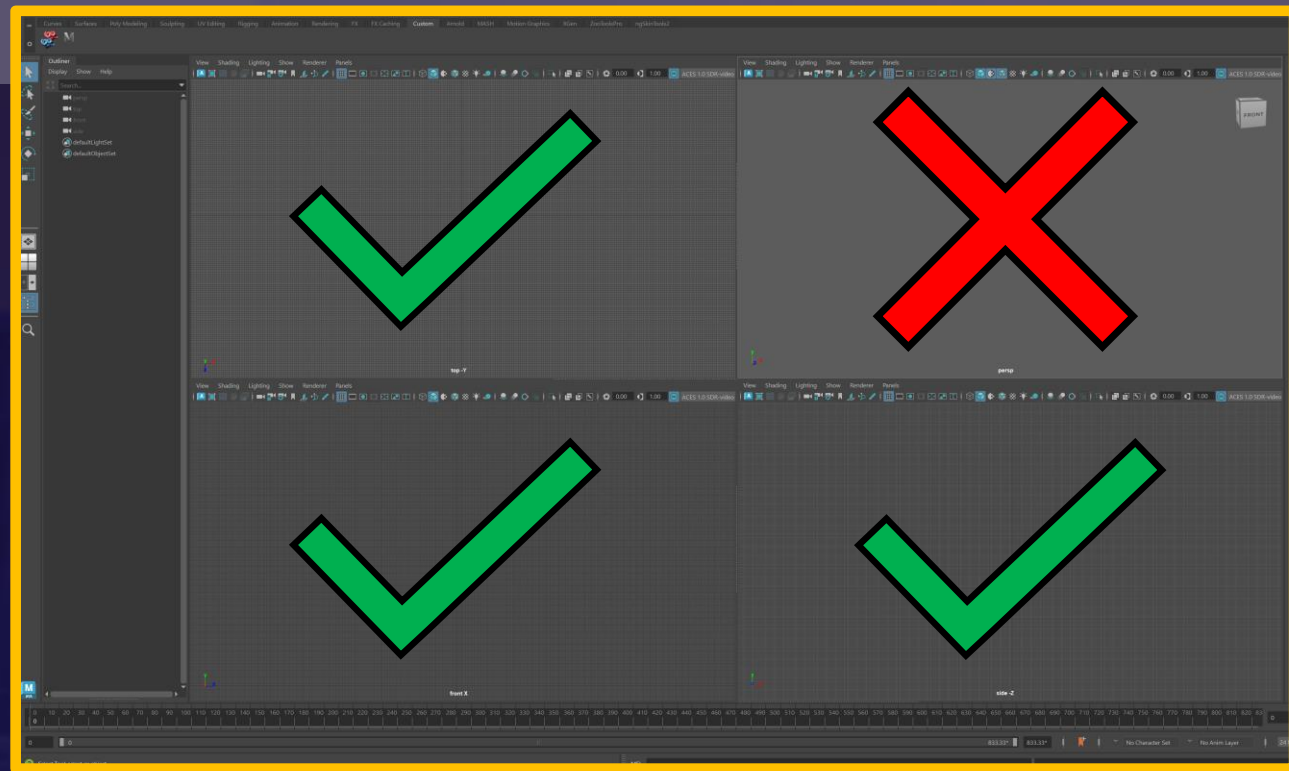


REFERENCE IMAGE SETUP FOR MAYA

Step 4

Please note that **importing into the Perspective** view will not result in a useable result.

Press the **Spacebar** to toggle between viewports.





REFERENCE IMAGE SETUP FOR MAYA

Step 4

Import images into your empty 3D scene.

We will have to do this **THREE** times, each in a different **ORTHOGRAPHIC** viewport:

- **Top View**
- **Side view**
- **Front view**



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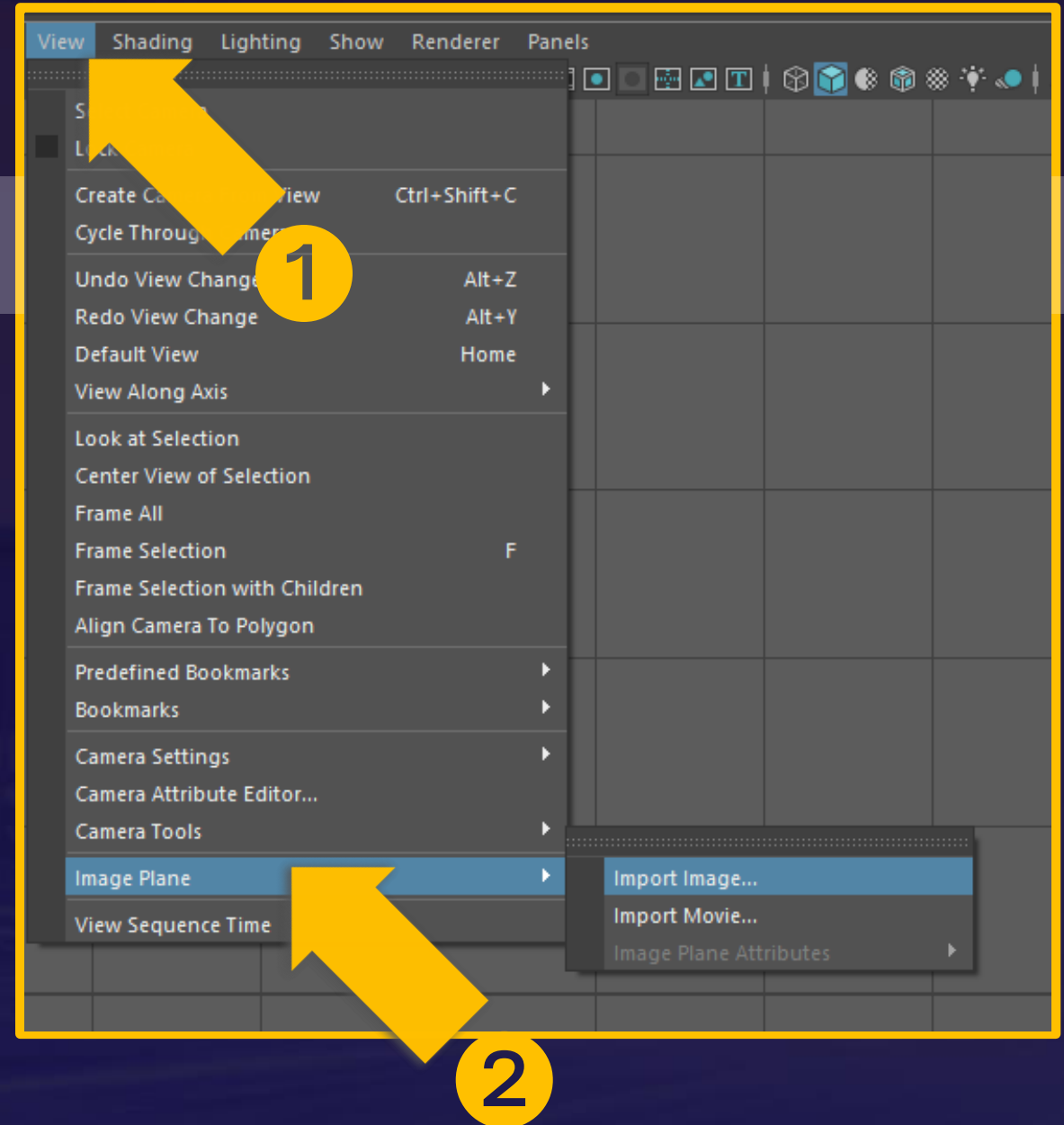
3D Reference Images

REFERENCE IMAGE SETUP FOR MAYA

Step 4a

In the TOP Maya viewport:

- 1 Open the View tab.
- 2 Select **Image Plane > Import Image**



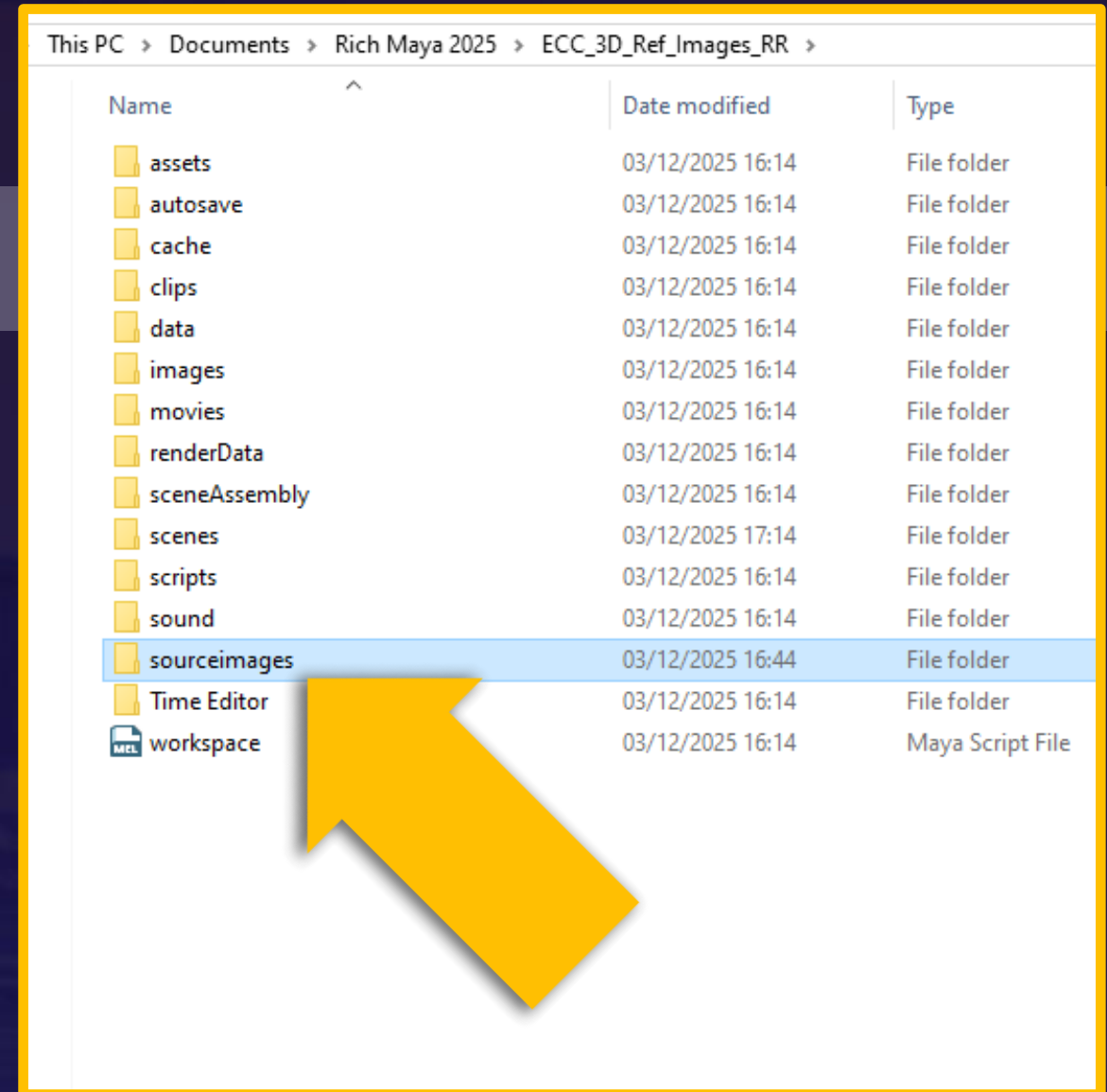


REFERENCE IMAGE SETUP FOR MAYA

Step 4a

Import the image file downloaded from your Moodle Resources.

Navigate to the **Sourceimages** folder that you saved these to.



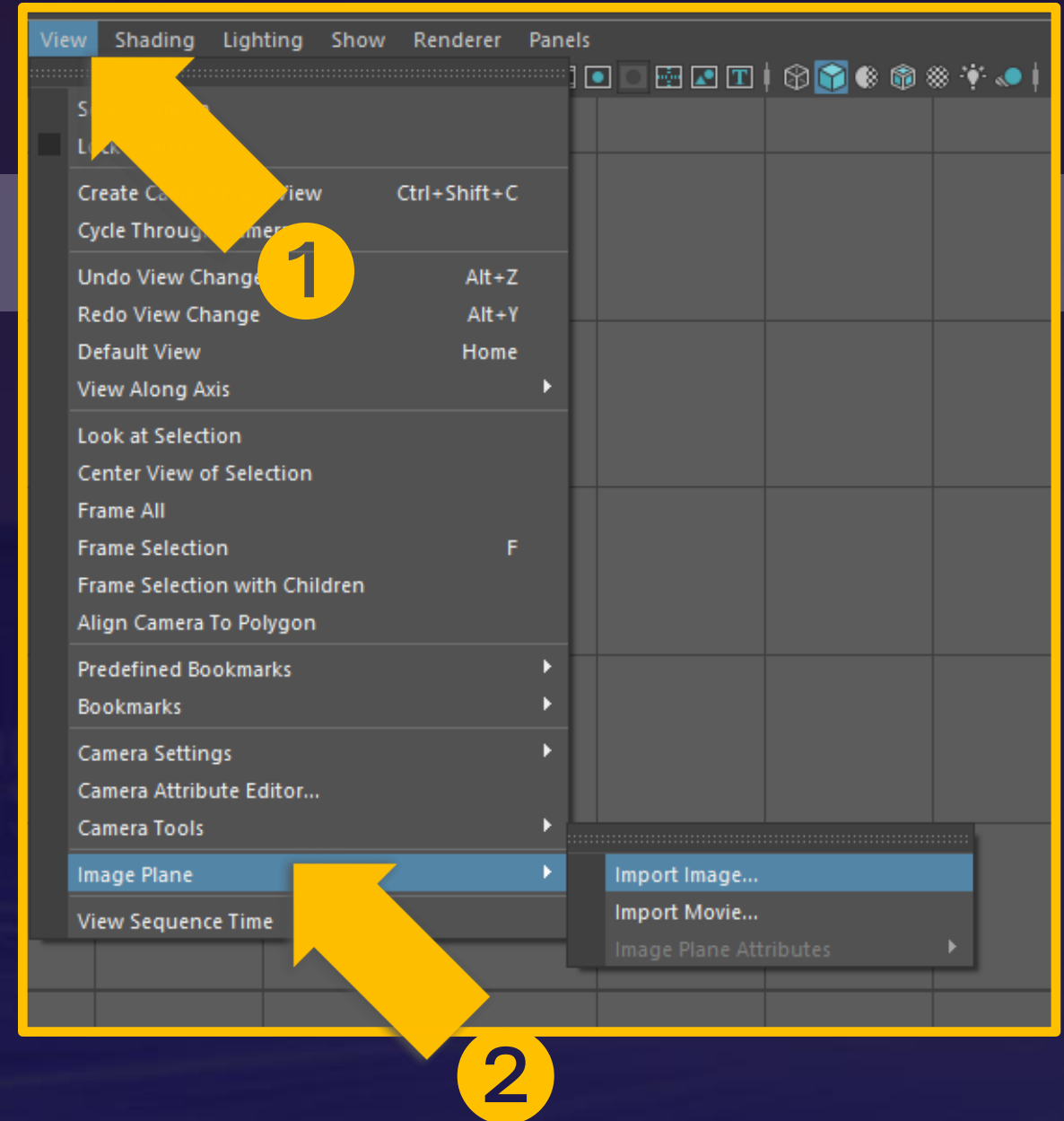


REFERENCE IMAGE SETUP FOR MAYA

Step 4b

Now do the same for the **SIDE** viewport and **FRONT** viewport.

Make sure you use the right viewport for the corresponding image – if you make a mistake **the image plane can be deleted** in the same way as any other asset in the 3D workspace.



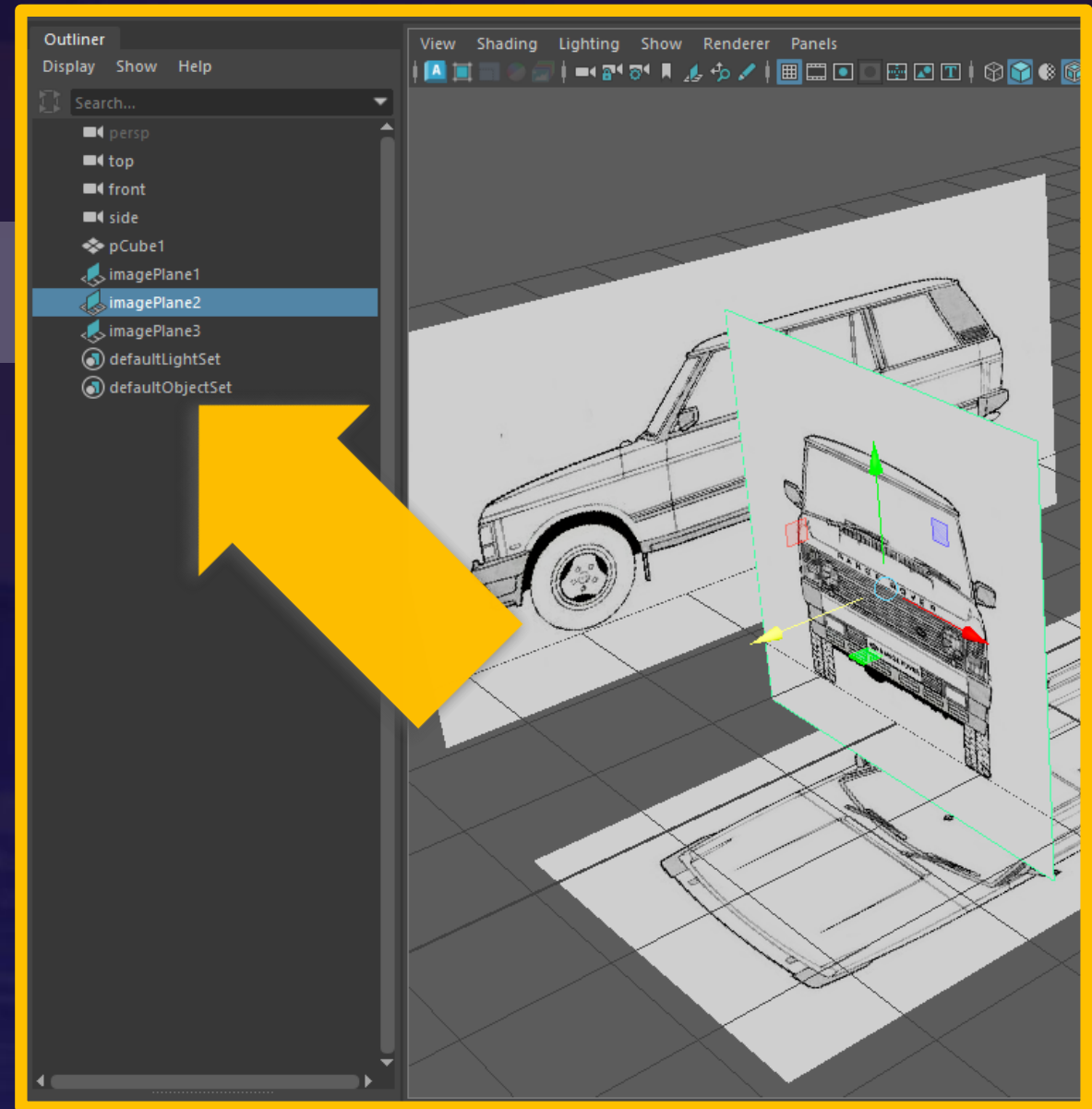


REFERENCE IMAGE SETUP FOR MAYA

Step 5

Select one of your images to move it into a better position.

This can be done in the actual viewports or in the **Outliner** on the left-hand side of the screen.



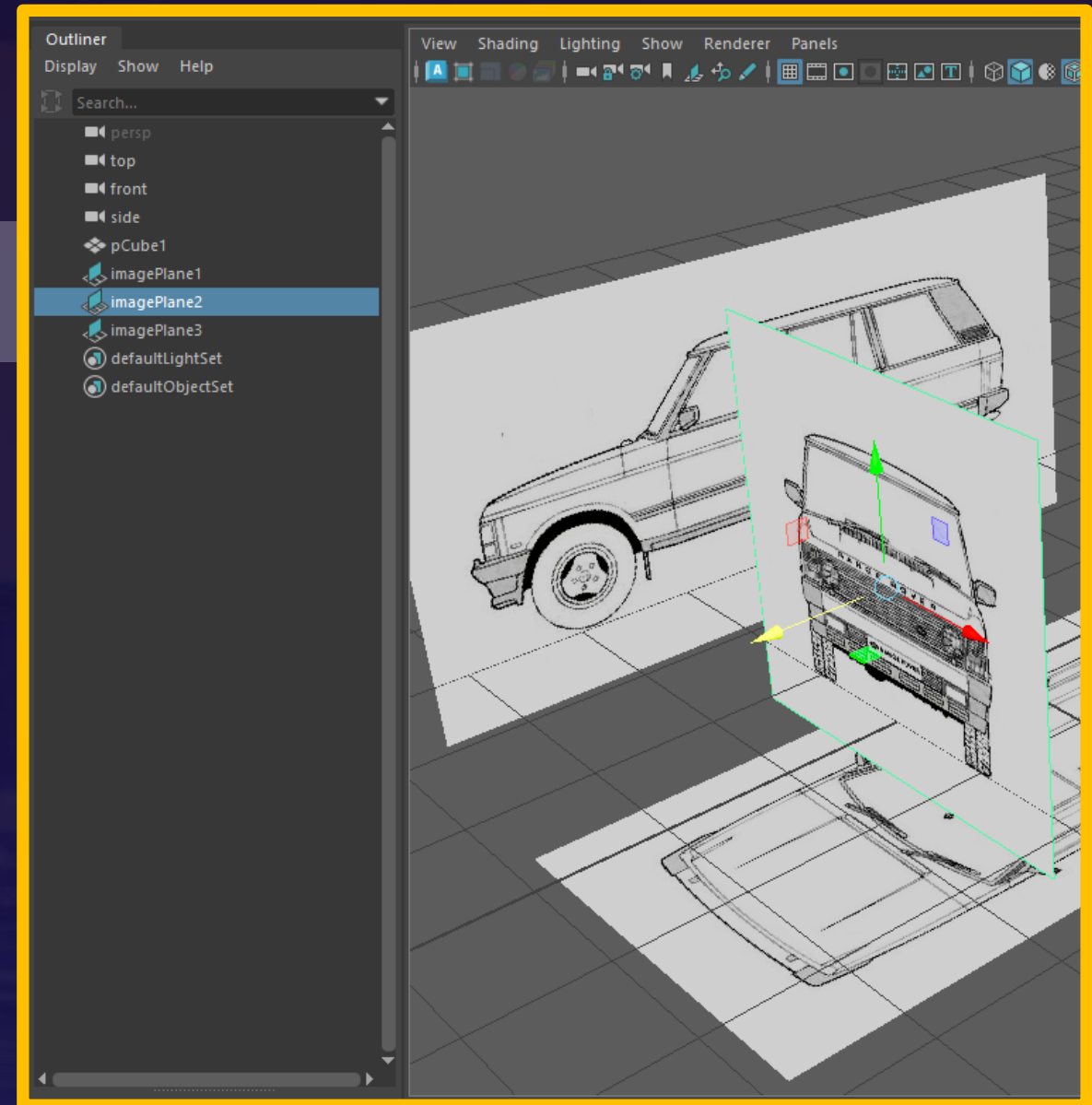


REFERENCE IMAGE SETUP FOR MAYA

Step 5

If desired, you can **rename each image plane** to make them easier to identify.

Make sure you are in **OBJECT MODE** (F8).



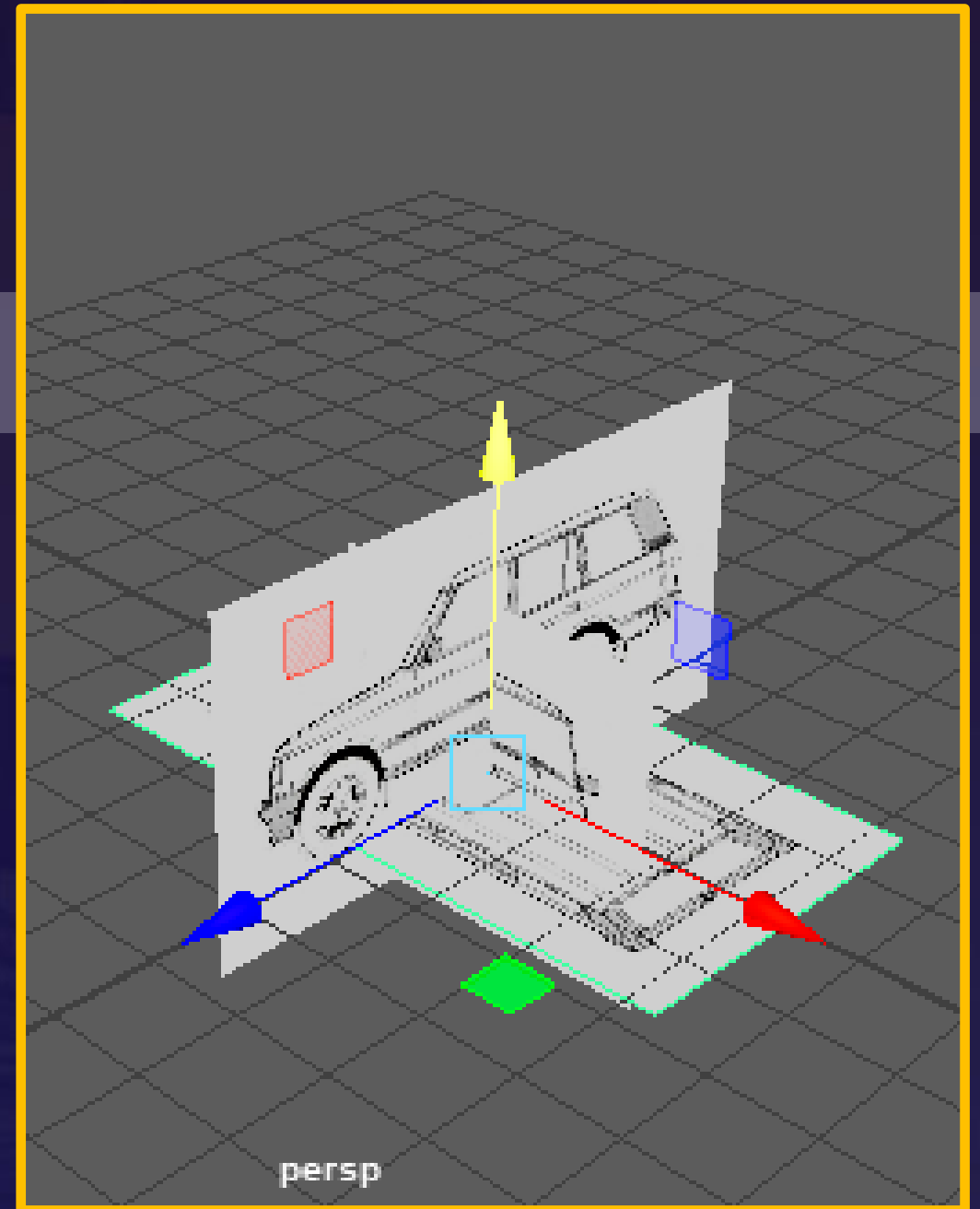


REFERENCE IMAGE SETUP FOR MAYA

Step 6

Translate the images from the centre point of your scene.

You can do this by **selecting each Image Plane** and moving it using the **default Maya translation tools**.



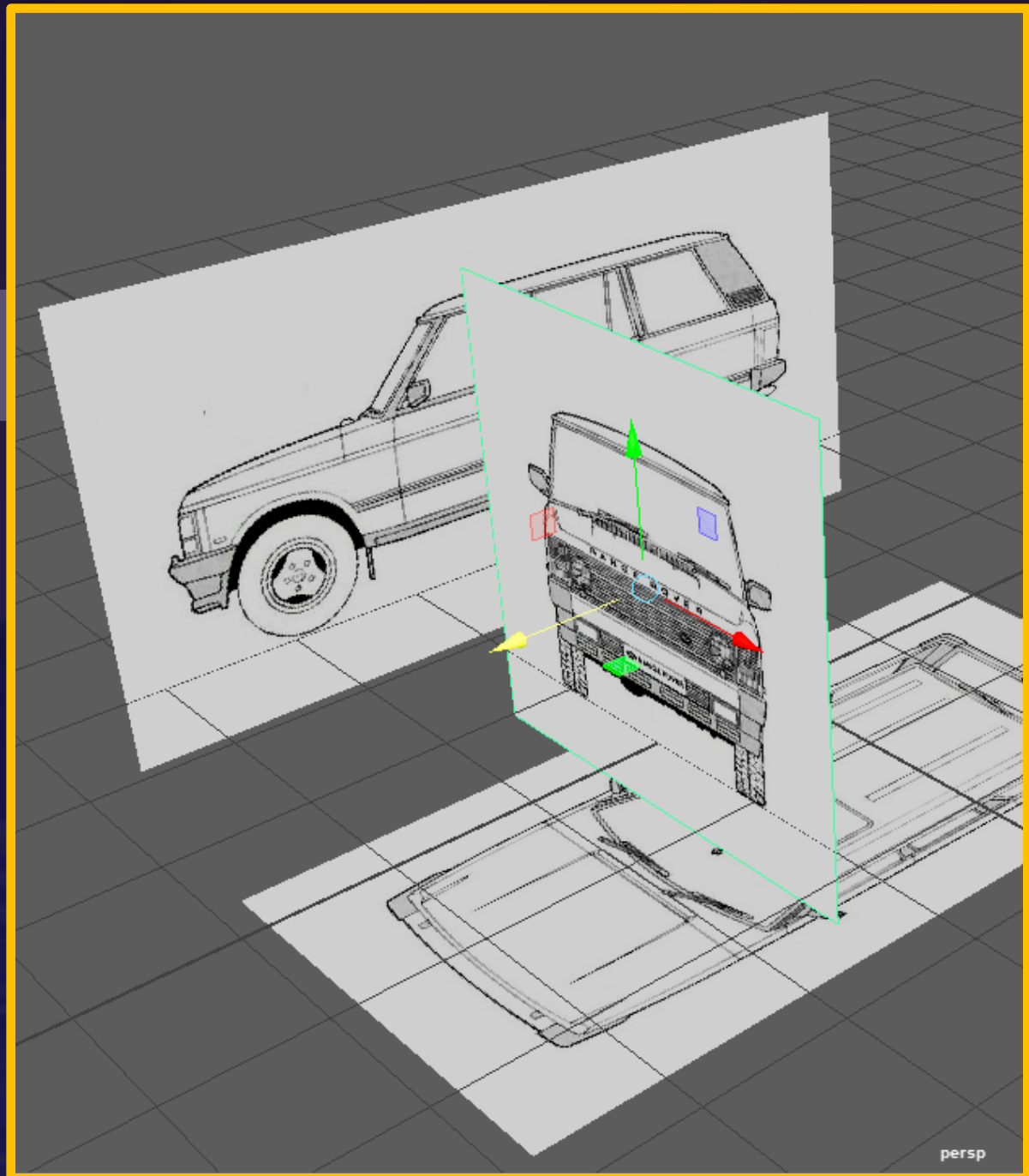


REFERENCE IMAGE SETUP FOR MAYA

Step 6

The physical distance from the model is not important as long as it does not interfere with your modelling process.

If need be, **move each Image plane.**





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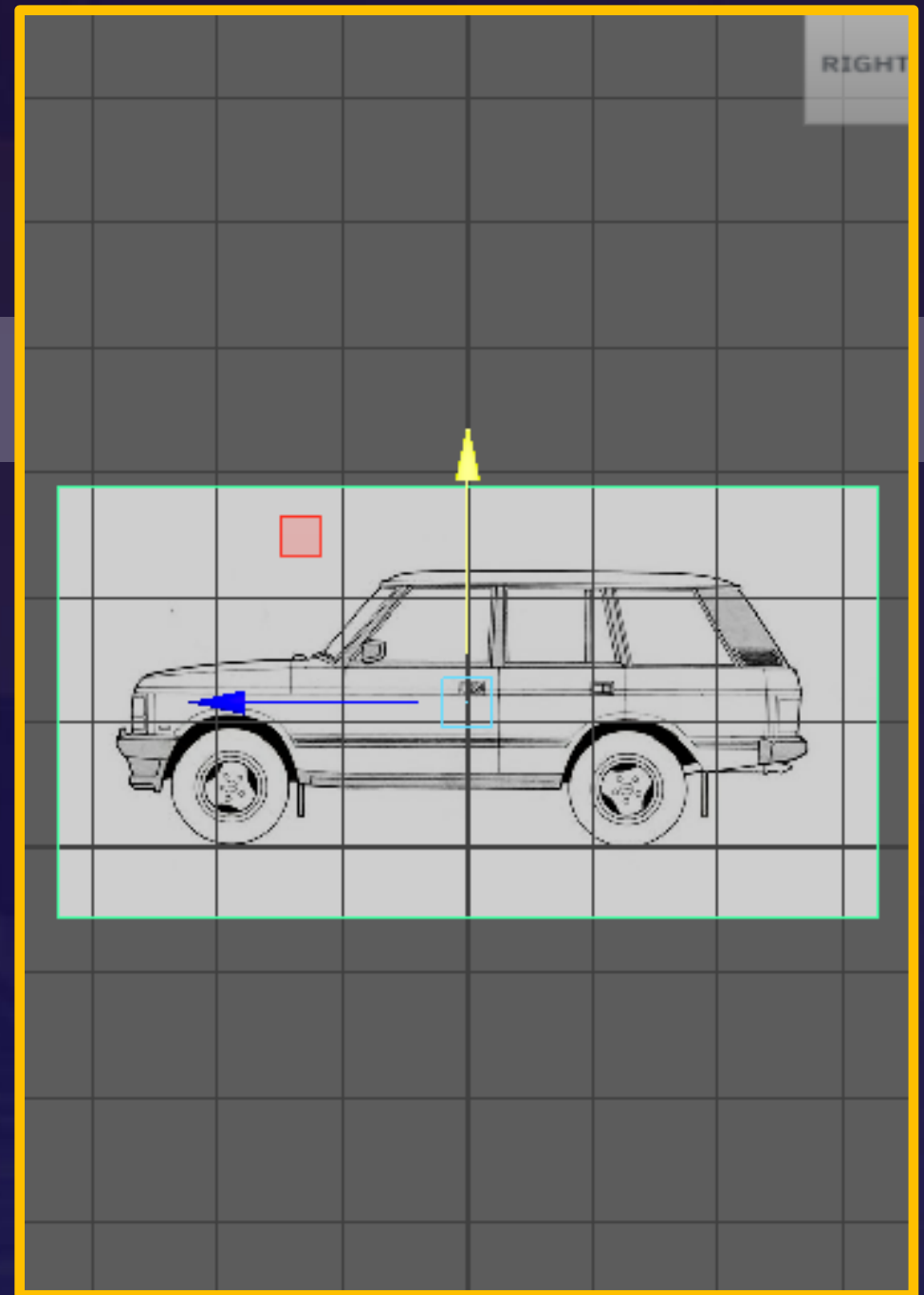
3D Reference Images

REFERENCE IMAGE SETUP FOR MAYA

Step 6

Orthographic views **do not include perspective** so distance will not affect how the references appear.

The **centre of your scene is where your 3D model should be created** – references will affect your ability to see if left on the main axis.





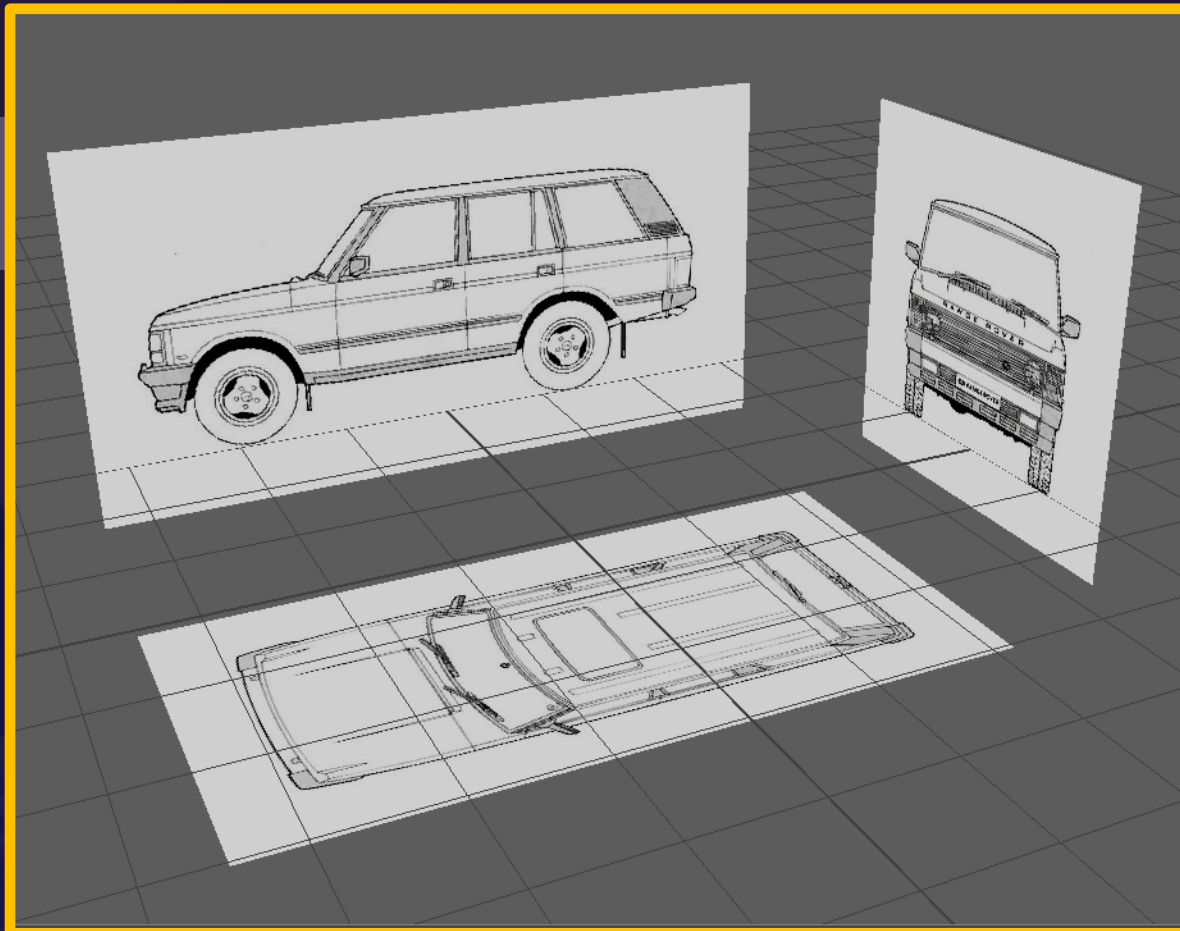
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3D Reference Images

REFERENCE IMAGE SETUP FOR MAYA

Step 7

You should now have a scene that is **ready for you to begin an accurate 3D modelling process** based on reference images used as guidelines.





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Remember:

**SAVE YOUR WORK
AND SAVE IT OFTEN!**



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Any Questions?



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