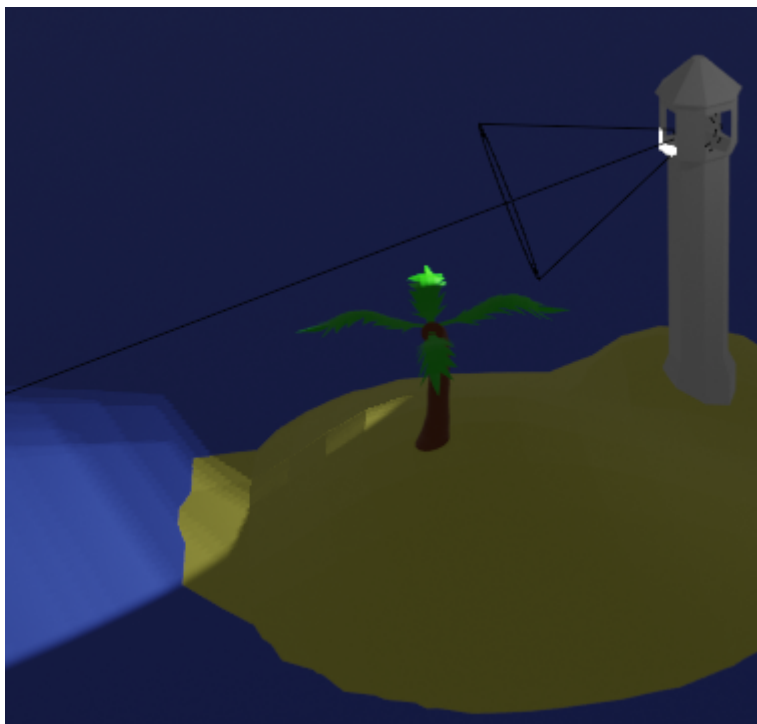
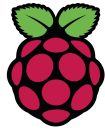


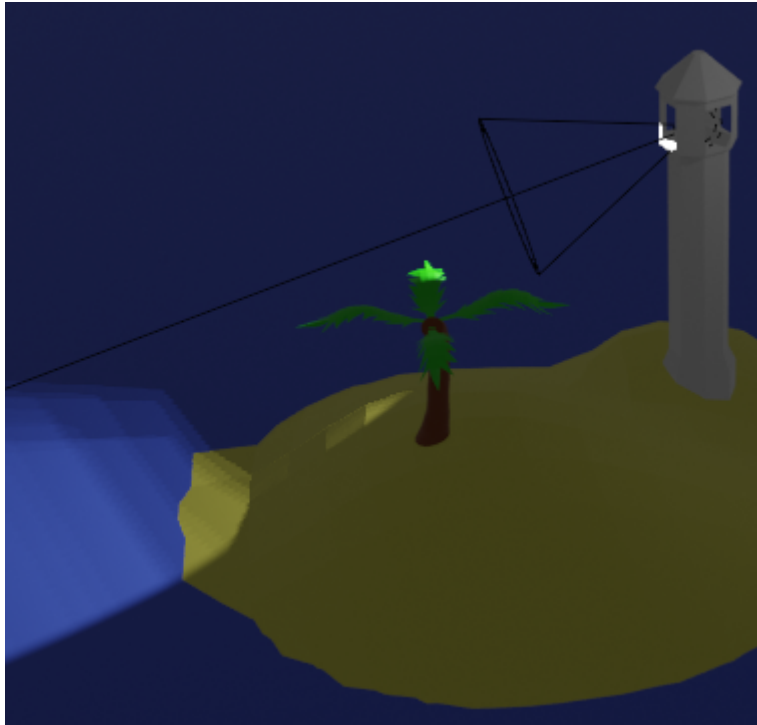
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Lesson 5 - Lights, camera, render





Task Lights



Steps

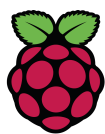
1. Add a spot light

Instructions

In the lighthouse scene:

Add > **Light** > **Spotlight**

In the **light tab**  in the bottom right of the Blender interface adjust the **strength** of the light to be **50000 w**.



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2. Position the spotlight

Move the spotlight into the **top of the lighthouse**.

Rotate the spotlight to be **facing out** of the lighthouse and **slightly down**

Tip: select the spotlight and press **R ⊕ Y ⊕ 72**

3. Animate the spotlight

Make sure that the timeline is on **frame 100** and **select** the **spotlight**

Press **I** to set a keyframe and select **RotLocScale**

Move the timeline to point to **frame 160**

Select the spotlight and **rotate** it **360** degrees around the **z axis**

Tip: select the spotlight and press **R ⊕ Z ⊕ 360**

Press **I** and select **LocRotScale**

Play back your animation and **adjust** the lighting and animation to work

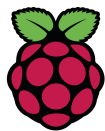


4. Make a setting sun

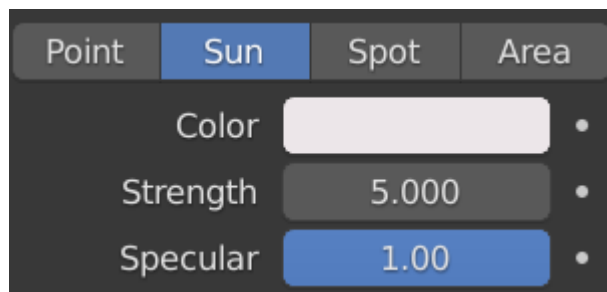
In the lighthouse scene:
Add ▸ Light ▸ Sun

Move the **timeline** to **frame 1**

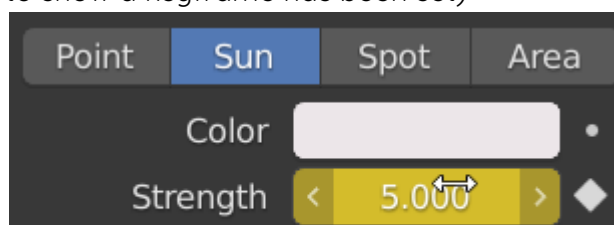
In the **light tab**  Adjust the **strength** of the sun to **5**.



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And press **I** to set a **keyframe** (it will turn yellow to show a keyframe has been set)



Move the timeline to **frame 100**

Change the **Strength** of the **Sun** to **0** and press **Enter**

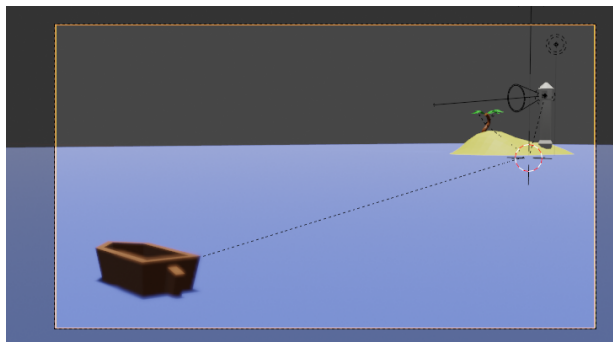
Hover your **mouse** over the **Strength** of the **Sun** and press **I** to set another keyframe

Explorer task

Add another spotlight to the lighthouse that mirrors the current light, rotating in the opposite direction

Animate the colour of the sun to turn red as it sets

Task Camera

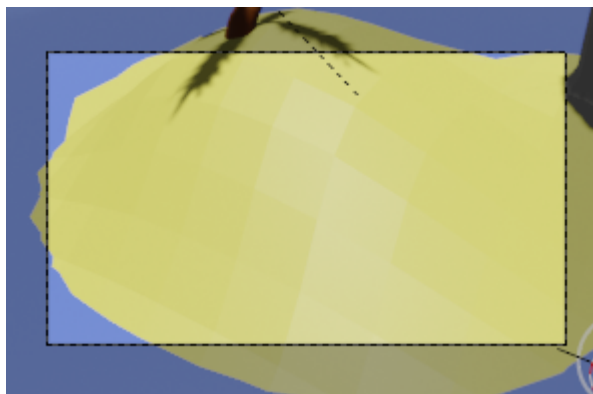


Steps

1. Look through the camera

Instructions

Press **0 on the numpad** or the **camera icon** to see through the lens of the camera

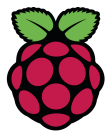


We need to reposition the camera!

Tip: You can press 0 on the numpad to move in and out of the camera. Make sure that **Num Lock** is **enabled**

2. Position the camera

When inside the camera view (press 0)



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Press **Shift** + **`** (the **AccentGrave** key, on Windows and Mac this is beneath the Escape key). This will put you into **fly mode**.

W - forwards

S - backwards

A - left

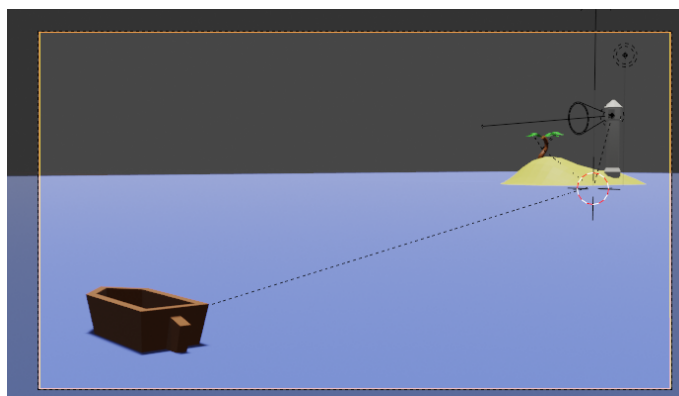
D - right

Shift - speed up movement

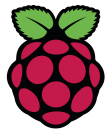
Move mouse to rotate

Move the camera so that the boat and island are both in the view.

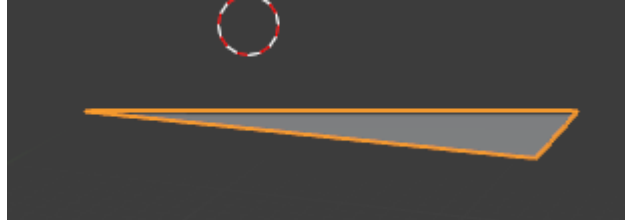
Press **left mouse button** to **fix** the **camera** position



Tip: If you zoom out too much you might find that parts of your scene starts to disappear. This is Blender **'clipping'** the image to avoid displaying too much at once.



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For large scenes such as the boat scene, you can change the clipping distance, **Click** this little **arrow** near the rotation widget (or press **N**)

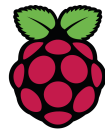
In the view menu change **End** to **3000m**, that's 3km(!):

3. Focus the camera

Having selected the camera, in the **camera** tab

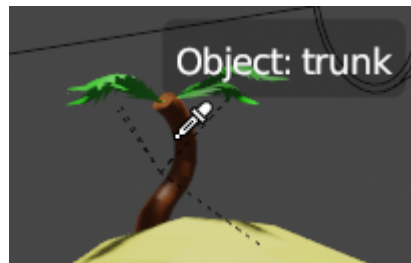


enable Depth of Field

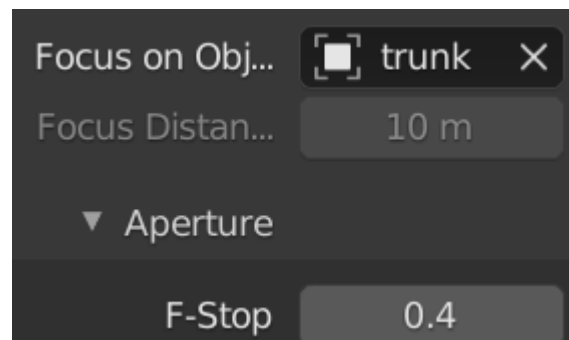


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Select the **dropper**  and **click** on the palm tree **trunk**



Change the **F-Stop** to be **0.4**

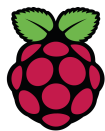


This will make the tree in focus, but the boat, slightly out of focus.

Explorer task

Add clouds to your scene and get them to float across the screen.

Animate the ocean moving up and down very slightly. Animate the boat rocking.



Task Rendering



Steps

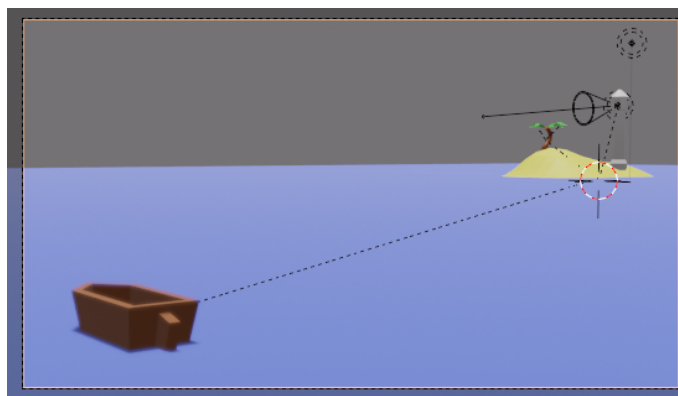
1. Check your scene is ready to render

Instructions

Press **0 on the numpad** or the **camera icon** to see through the lens of the camera

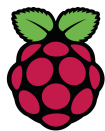


Move the camera so everything is within the lens box



Preview the **animation** by pressing the play button (or the spacebar)



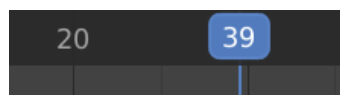


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If your film is too long, with a lot of nothing happening at the end of it, **adjust** the **End frame**

number: The image shows a timeline control interface with a clock icon, a "Start" button with the value "0", and an "End" button with the value "177".

Press **play** (or the **spacebar**) again to check that the end point is correct, move between frames by dragging the blue frame pointer



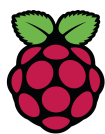
Tip: If any important animation spills out of your camera lens box, adjust the camera and keep replaying it.

2. Set the output type

Switch in the **Output Properties** tab The icon for the Output Properties tab, showing a document with a play button.

Under **File Format**, select **FFmpeg** video:

Tip: You can export preset **video resolutions** using the **Dimensions drop-down** menu:



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3. Set output location

In the **Output Properties** tab

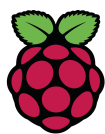


Find the Output destination and click on the file image to choose where you want to save your video

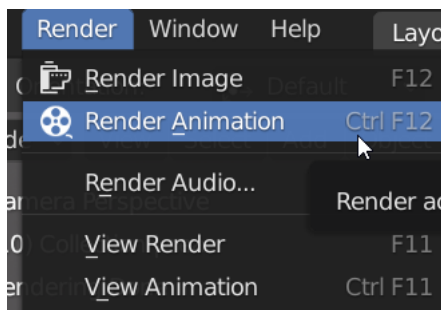
4. Render your film

In the top left of the Blender interface, find the Render menu:

Render ▸ **Render Animation**

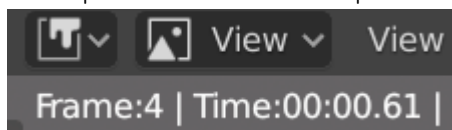


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This process might take a few minutes as you watch each individual frame being made.

Keep **track** of the **frame** Blender has **rendered** in the top left of the new output screen:



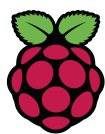
When finished you will find the video file has been output to the folder you chose.

5. Try out ray tracing

Click on the **Render Properties tab**  in the bottom right of the Blender interface

Set **Render Engine** to **Cycles**. If you have GPU set the **Device** to **GPU compute**

Press **F12** to render an image. You might find this takes a long time. See the **estimated remaining time** in the **top left** of the new **output screen**:



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Frame:87 | Time:00:02.82 | Remaining:01:25.24 |

Tip: If you do want to use Cycles, you might want to reduce the overall resolution of your film on the

Output Properties tab 

Watch each other's films!
