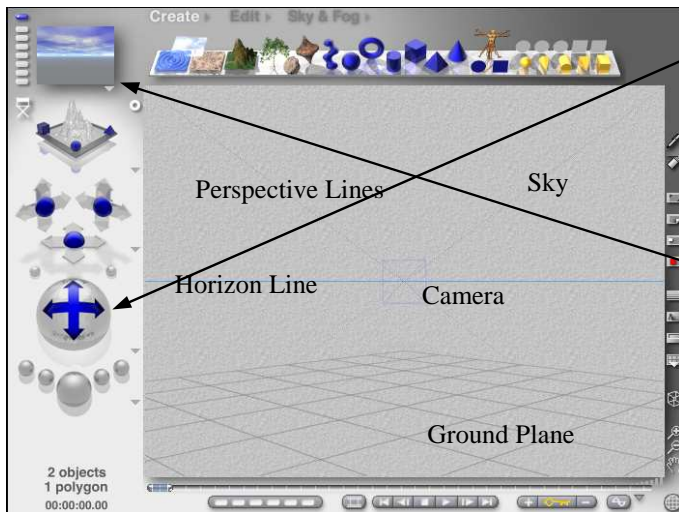# Getting Started with Bryce 5

The first thing you will notice when you start Bryce 5 is the big grey area in the middle of the screen. This is your Scene. The place where you will be creating your virtual world.
Bryce was originally designed with landscape creation in mind so we have a horizon line, some perspective lines, a ground plane, a camera and the sky.

The big button with the blue cross hairs is the camera Control button. Hold your mouse button down on it and move it around. Depending on where you move your mouse the scene will rotate around, over and under, or diagonally. Try this again while watching what happens with the Preview window. When the horizon line is higher in the scene there is less sky and vice versa. If you tilt the scene too far over you can end up underneath the ground plane. This blacks out the preview scene.

Another thing you may have noticed is that there are none of the standard windows menus at the top of the screen. In Bryce 5 these are hidden until you move your mouse into that area—Try it and see.
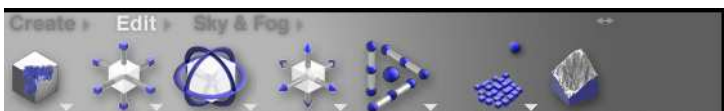
There are three main sets of tools for working in Bryce. These are accessed by clicking on the name of the toolbar. The Create toolbar is the always open when you start the program.

The Create Toolbar

This is where you go to put new planes, objects and lights into your scene. Simply click on the tool to create the object in your scene.

The Edit Toolbar

This toolbar allows you to move, resize and generally manipulate the objects in your scene. You need to have the object highlighted (red for most) in order to work on it.

The Sky and Fog Toolbar

Here is where you adjust the atmospherics of your world. Things like cloud cover, fog and haze, sun and moon etc.

Each set of tools has its own library of Presets. These are accessed by clicking on the arrow next to the name. They allow you to choose from sets of objects (Create), materials (Edit) and skies (Sky and Fog) that have already been made.

Creating a Scene

**The best way to see how this all works is to create a scene.
Go to File (remember this is hidden at the top of the screen until you move your mouse up there) New Document (if it asks you if you want to save the current say no) and accept the default settings by clicking on the tick in the bottom right hand corner**

> **Tip: This is a standard procedure in Bryce.**
> **Click on √ to accept the changes and on X to forget about them.**

The first thing we want to do is get our ground looking like ground.
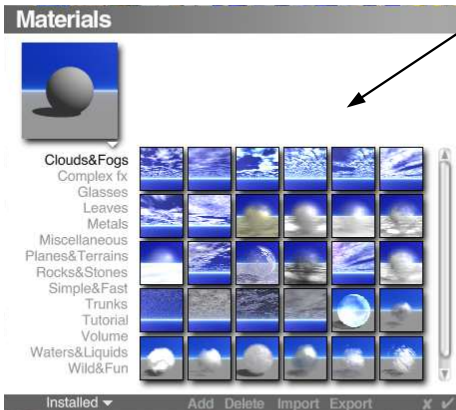**Click on the ground plane to highlight it. (Reminder: High-lighted objects are usually red)**
Now click on the arrow next to the word Edit
**This screen will come up.**
Click on the words Planes and Terrains and choose one by clicking on it.
Then click the tick at the bottom right to return to your scene
I chose Volcano Heart for my scene and this is the preview.


Now for the sky. The sky is not an object, so no highlighting is involved here. Simply click on the arrow next to Sky and Fog. Select a sky preset and click on the tick to return to your scene. Simple huh!
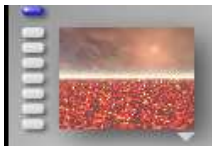
You will notice that the colours in my scene have all changed. This is because the software is programmed to simulate real life. In real life colours change according to the amount and type of available light. Bryce tries to copy this effect and most of the time does quite a good job.

We have our ground and our sky the next thing to do is put some objects in. It might be best to go with something simple this time around. You should still have the Create toolbar showing (if not you can get back to it by clicking the word Create)
Click on the sphere (blue ball) and it will appear in your scene already highlighted.
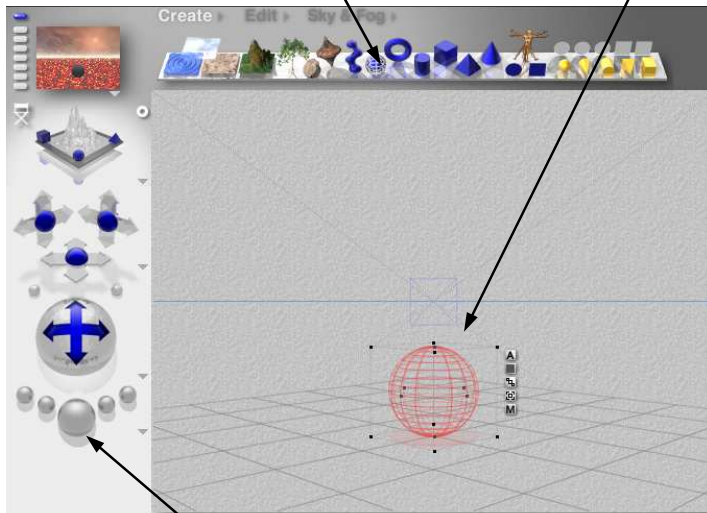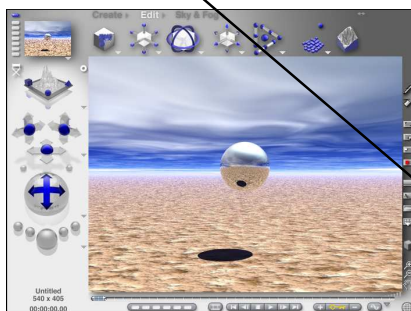

To move an object up and down or left and right in your scene you simply need to hold the mouse button down and drag and then drop (release the button)
Move your sphere to the middle of the scene.

Depending on the type of ground surface and sky that you have chosen you may have a shadow underneath it.

**This is another way that Bryce simulates real life.**

While your sphere is still highlighted Go to the arrow next to Edit and change the Material to Metals—Polished Silver. Click on the tick to return to your scene. You will notice in the preview that the ground and sky are reflected in the metal. Again - just as it would be in real life.
Clicking on the largest button underneath the control button will Render (paint the materials onto) your scene.
You can now go to File and Save to keep your first scene in Bryce.

Moving and Resizing Objects
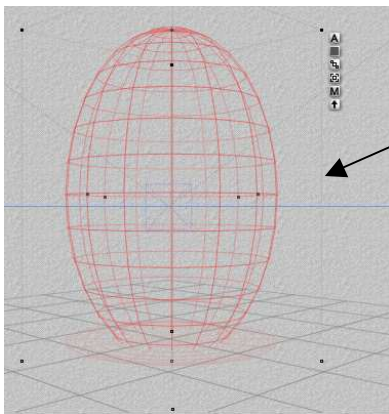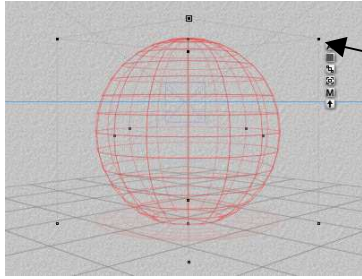
Using The Highlighting Squares

If you have resized pictures on you computer before you will most likely have used the Black Squares on the highlighted picture to do it. It is the same with Bryce except there is a 3rd dimension. If you move the mouse over the black squares in Bryce you will see that the letter x y or z or a symbol like the one at left will appear depending on which box you are over. They indicate up and down (y), left and right (x), backwards and forwards (z), and a scaled resize in all dimensions.

Locate one of the black squares that have the letter y. Hold the mouse button down on the square and drag. Your sphere will be made longer (or shorter) depending on which direction you drag. Try the same with the x and z squares and with the . You will notice that with the last one that the object doesn't change its shape it just gets larger or smaller.

To move an object in this mode you simply hold the mouse button down on the red framework and drag left or right or up or down. This method can't be used for moving an object backwards or forward in a scene

## Moving an object with the keyboard arrow keys

Highlighted objects can also be moved using the arrow keys on the keyboard. But these controls will only move the object backwards and forwards in the scene not up and down or (directly) side to side. Try moving your highlighted object with the arrow keys

Using the Edit Tools

The third way of moving or resizing objects is by using the tools on the Edit Toolbar.
Reminder: The toolbars are accessed by clicking on the word rather than the arrow.
I have put labels under the ones that we will be mostly concerned with.
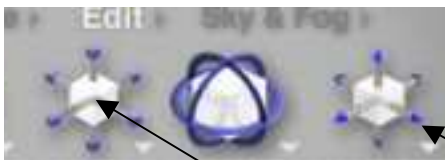
Resize   Rotate   Move

These tools are all used by holding the mouse button down on the blue bits and dragging. Probably the best way to get to know how these tools work is to try them and see what they do.
Hints:
- Imagine you are in a square room and want to move something to the front right hand corner (from your view) - drag here on the Move tool.
- Make a cube to see how the Rotate tool really works.
- Dead centre of the Resize tool will allow you to resize in proportion.

Rendering a Scene
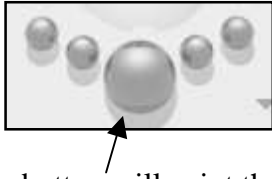
Were it all turns into Art

This large button will paint the materials onto the wire frames in your scene. When you click the button you will see a line move down the page a number of times and the picture painted in behind it. In most 3d software this is called rendering.

If you want to stop the rendering so that you can go back to creating your scene simple hit the Esc key on your keyboard.

Once your scene has finished rendering you can go to File and Save Image As to save your scene as a standard picture file in a number of different file types. I use the bmp file type mostly because you don't lose any quality from the render.

Rendering to a Larger Size

Using the default settings renders your scene at about the size of a normal paper based photo. For larger renders you need to change the Document Settings. It is best not to do this until you are completely finished your scene as a larger document takes up more processing memory.
Go to File and Document Setup. You will be taken to this dialog. These are the default settings.
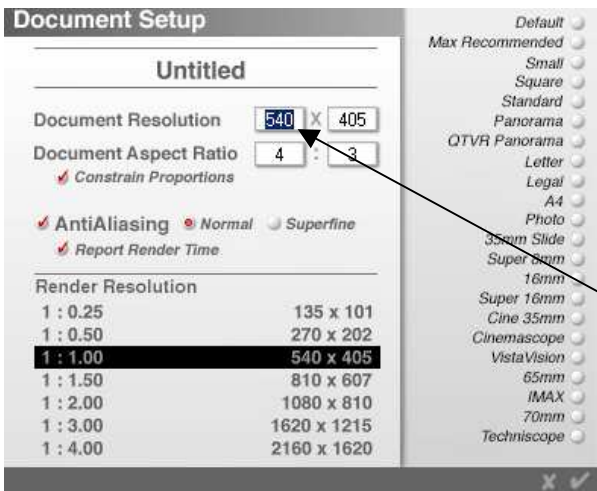
Changing the Document Resolution setting will make your document larger or smaller

Changing the Document Aspect Ration will change your document from landscape to portrait or even to square if you like.

When I am ready to do a final render I usually double this number (to 1080) and leave the other settings as they are. (The 405 will adjust automatically if you have Constrain Proportions ticked)

This creates a good size image for the computer screen and for printing up to about A3 size (double A4)
To accept the new settings click on the tick.

Important Note:
When you go back to your scene you will notice that the scene view takes up more of the screen and some of the scene may be hidden behind the edge. This is just the programs way of adjusting to the larger view. If you render your scene now you will have the whole thing but twice the size.

Remember to go to File and Save Image As when rendering is complete to save your finished picture.
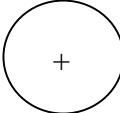
Terrains

Making Mountains and Mole Hills

Clicking on the Terrain Tool on the Create Toolbar puts a default mountain shape into your scene.
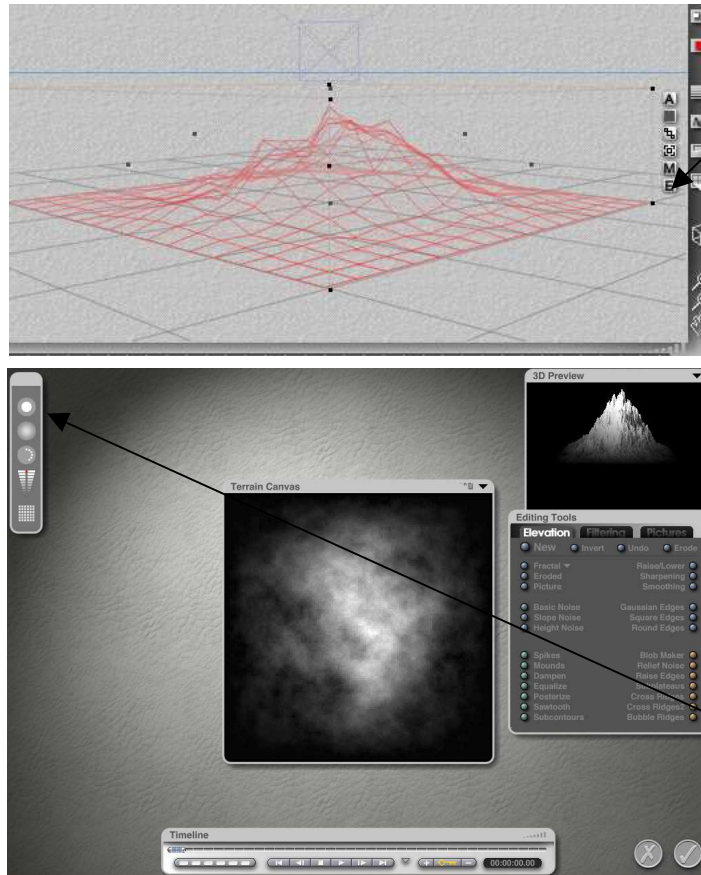
The Terrain Editor

To change the shape of a Terrain or to make a new one click on the E
This will open up the window below.

In the middle of the screen is the Terrain Canvas. This shows a top view of the current Terrain and as the name suggests it is also where you can paint Terrains. It might help to think of it as a shovel rather than a paintbrush though, as the process is more like adding or removing dirt from a hill.
Move your mouse over the Canvas and a circle will appear. This is your paintbrush. Click and you will add dirt. Keep an eye on the 3D Preview window to see how the Terrain changes as you paint. To change your brush size hold the mouse button down on and drag the top icon in the toolbox at left. The next two tools adjust the density (how much dirt) and the softness (large or small grains) of your paintbrush.

Note: To clean up the canvas at any stage click on the New button in the Editing Tools or to return to the original simply exit the editor by clicking on the cross at the bottom right of the screen.
Reminder: Click the tick to keep changes. Click the cross to discard them.

Complete the task Creating 3d text in Bryce to practice using the Terrain Canvas and Clipping Bracket.

Editing Tools

The Editing Tools allow you to create new Terrains and change existing Terrains with a button click rather than using the Canvas. The best way to learn these is to try them out and see what they do.
Fractals are presets for terrains such as Cracked Mud and Rolling Hills. You need to select the Fractal from the drop down menu before clicking on the button to get the required effect.

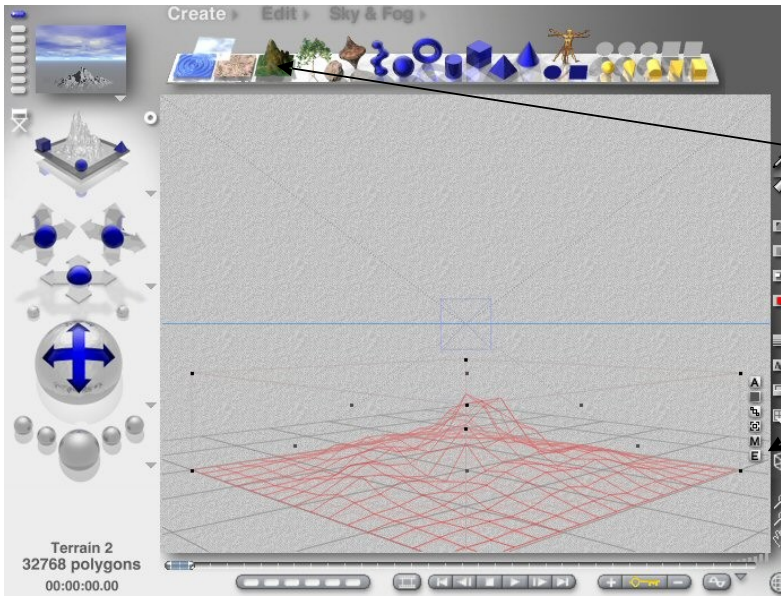You can also use pictures to create Terrains.

The Symmetrical Lattice

This tool and its editor work in basically the same way as the Terrain Tool except that it creates a double-sided Terrain as the icon suggests.

Creating 3d Text In Bryce

This 3d text was created in Bryce 5 using the Terrain Editor.

Open Bryce and create a new terrain by clicking on the Terrain tool on the toolbar—the one that looks like a mountain.

Click on the **E** here to go into the terrain editor

In the Terrain Editor click on the New button under elevation—this will give you a black square to paint your text on.
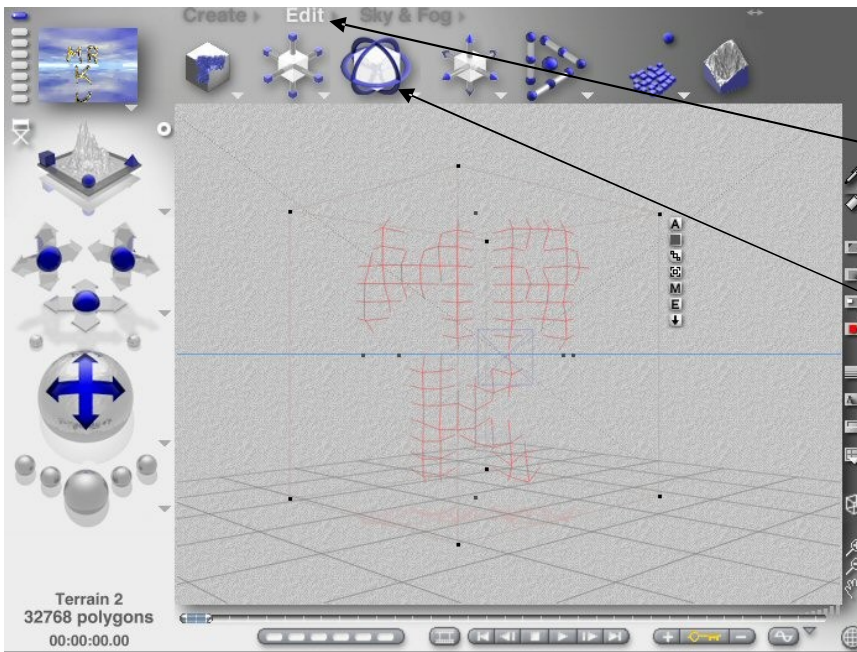
You may need to adjust the size of the brush here.

Paint in your text

Use the clipping tool to remove the square edges
Click on the bar and drag it up 'til the black turns red (click on the bar rather than the coloured strip)

Click on the tick to return to your scene

Click on the word Edit to go to the edit tool-bar

Use the rotate tool to turn you text up and around

Change the materials and render your scene
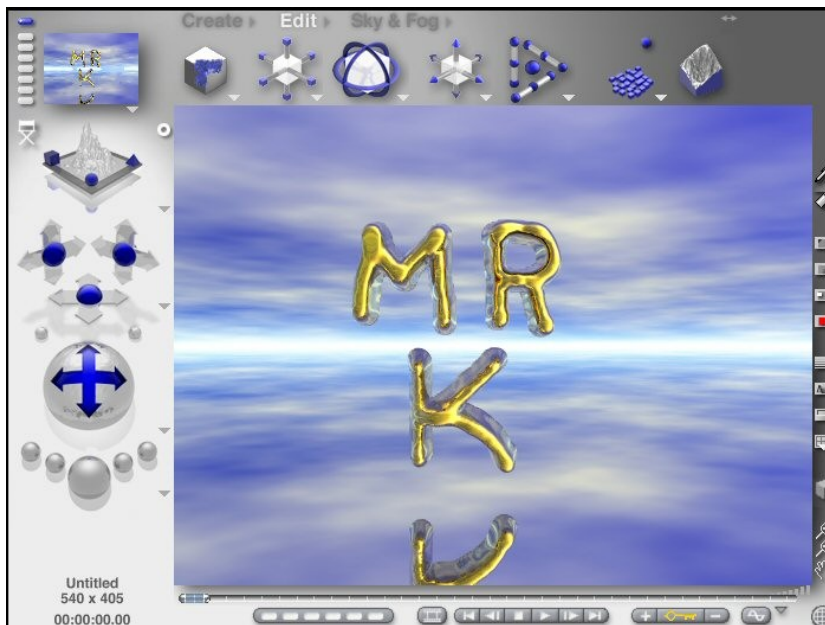
Your finished scene may look something like this.

I have used gold texture on the lettering and made the ground plane silver (to get the reflection.

Extensions

Create a wall (using the cube primitive) and mount your text on it so that it looks like it has been carved out of the wall.

Use the Symmetrical Lattice tool instead of the Terrain tool—this looks like a mountain and its re-flection. This will give you text that is 3d from all angles.

Trees
A Forest in a Lab

Clicking on the Tree Tool on the Create Toolbar puts a default tree shape into your scene.
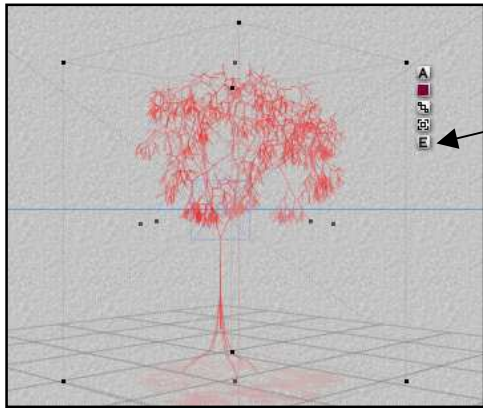
The Tree Lab
To change the variety and shape of a Tree click on the E
This will open up the window below.
The Tree Lab is divided into three sections
Branch/Trunk   Tree   and   Foliage

Tree
If you have a specific variety of tree in mind the first section you should look at is this middle one.
Click on the drop down menu under **Shape.**
Here you will find a fairly comprehensive list of tree types from Austrian Pine to Yew. Simply select one from the list.
Gravity increases or decreases the weight of the branches and makes them hang lower or higher.
Randomness changes the amount of **difference** between the parts of the tree.

Foliage (Leaves and Needles)
All the tree varieties listed under **Shape** in the **Tree** section are also available in the **Foliage** section under **Shape**. You can match the Tree and Foliage to get a more natural looking tree or mix and match to create your own unique variety.
Scale changes the size of the individual leaves or needles.
**Number of Leaves** is pretty much what it says.
The Default **Distribution** of Foliage is **Spiral.** This works for most tree types except the cold climate ones like pine trees. It is best to use the **Coniferous** setting for these types of trees.
Texture is to do with the way the surface of the leaves looks.

Branch/Trunk
You can also change the distribution, thickness, textures and angles of branches and trunks to create a truly unique tree.
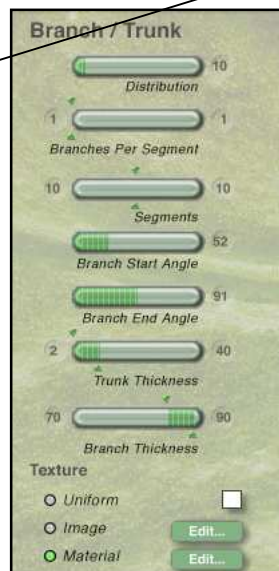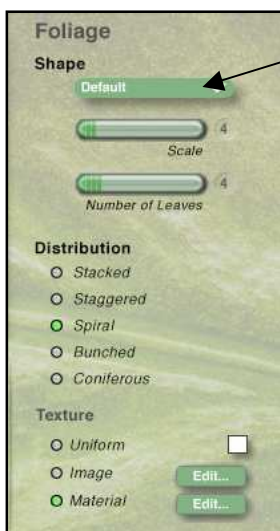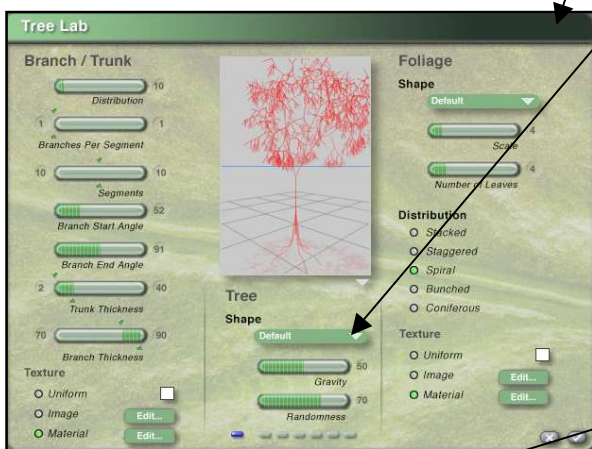
A Tip for Making Forests
As the trees designed in the tree lab are 3d objects you can make a reasonable looking forest by using multiple copies of the same tree but **resizing** and **rotating** some of them.

Other Vegetation
Pre-made trees and plants can also be found in the library under the **arrow** next to **Create.** Some of these are 2d planes rather than 3d objects. Using these for distant forests can reduce render times.

Sky & Fog
The Sky's no Limit

Clicking on the words **Sky & Fog** will bring up the **Sky & Fog Toolbar**

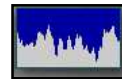The Scene Preview is on the left.
Click on the menu arrow on this icon to find these general sky and atmosphere options ⟶
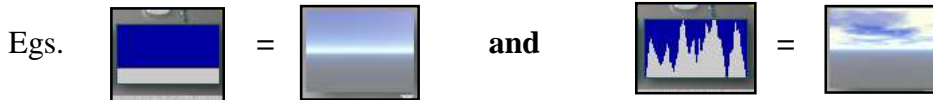
The next four items allow you to adjust the **colour and intensity** of foreground and background light and haze. **Click and drag on the picture** to change the **intensity**. **Click on the bar** at the bottom to change the **colour**
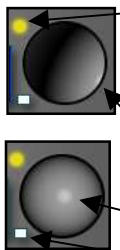
Cloud Cover
Clicking and dragging up and down or side to side on this icon   will change the amount and spread of clouds.

Egs.   =   **and**   =

Day and Night

Clicking on this spot here **instantly changes day to night** and the icon will change to a crescent moon. If you click again it will change back to the sun.
Holding your mouse down on the ball and dragging changes the position of sun or moon **gradually.**
The light dot in this position indicates twilight.
And in this position full daylight – virtually 12 noon.
Clicking here allows you to change the **colour** of the **sunlight.**

The Sky Lab

Click on this icon   to enter the **Sky Lab**

Too many options to explore in this course but feel free to have a play.

Reminder:
Click the tick to accept the changes, click the cross to discard them.

Positioning the sun and moon in Bryce

Author: rgagnon	
Step 1: Double Click the sun position sphere	
Step 2: Click the sun into place inside the work area	
Step 3: Placing the moon	

| Tools Needed |
|---|
| * **Bryce 5** |

Introduction
Every now and then, there is a reason to precisely add the sun or the moon into a Bryce scene, but there is no easy way to normally do this other than to patiently rotate the sun with the sun position sphere on the Sky & Fog Palette. An undocumented feature in Bryce provides a much nicer point and click method to get the sun where it's wanted.

Step 1 - Double Click the sun position sphere

Go to the Sky & Fog Palette and press Ctrl & Alt together and double click the sun position sphere. This is a hidden keycode that now permits precisely placing the sun.

Step 2 - Click the sun into place inside the work area
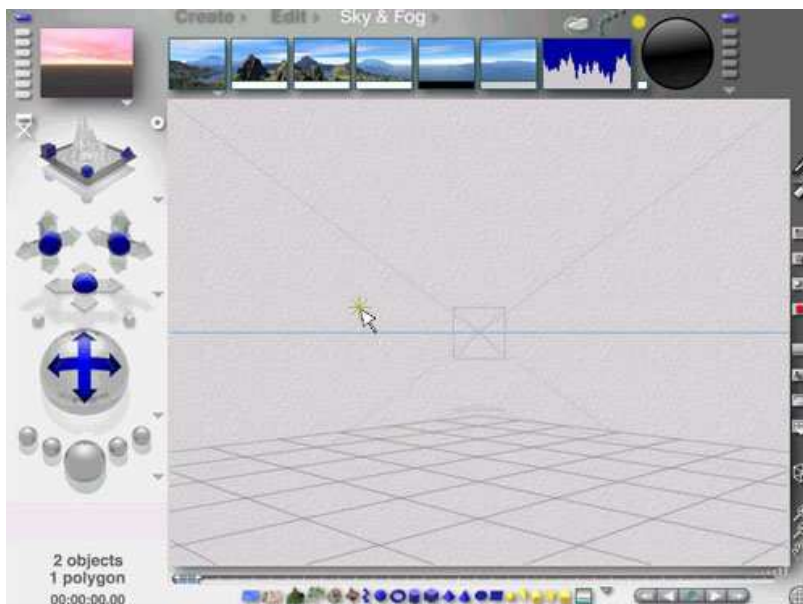
Holding down Ctrl & Alt together again, click anywhere above the horizon line and an asterisk will be placed in the main work area to show where the sun will be seen in the rendered image. The nano preview screen will more dramatically depict the sun's effects on the Bryce scene.

Step 3 - Placing the moon

The sun can be changed into the moon by either clicking the day/night menu toggle or by clicking in the scene by holding down Ctrl-Alt-Shift. That's all there is to precisely positioning the sun or moon in an image. This is a nice feature to create sunsets and spooky images with a full or partial moon.
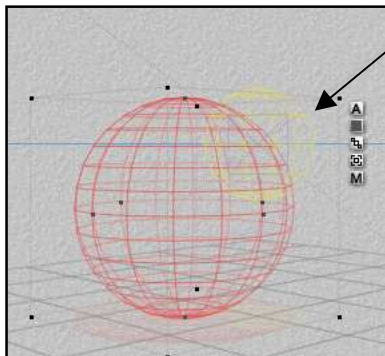
Lights

As well as allowing you to adjust the natural lighting of sun and moon in the Sky Lab Bryce gives you the tools to create new **point** and **spot** lights for use in your scenes. These are located on the Create Toolbar
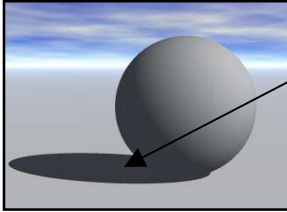
This Scene has just the natural lighting. You can see the shadow created by the sunlight. Let's see what happens if we include a **point** light in the scene. This is the first light in the group and looks like a yellow sphere.

In the wireframe view lights appear as yellow shapes when they are not highlighted. (The shape depends on the type of light and is the same as the toolbar icon for that light)

When they are highlighted they can be moved into position the same as any object. If you keep one eye on the Scene Preview while you move the light you'll be able to see the effect it has on the scene.
Note: You might expect that resizing a light would change the intensity or brightness of the light – this isn't the case.

Moving the light above the ball in the scene below has created a new shadow and a shine spot on the top of the ball. A little like switching on an invisible light globe.
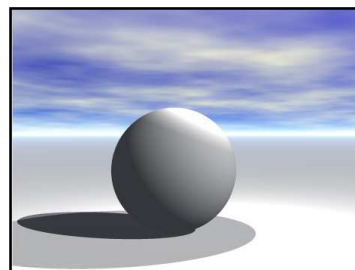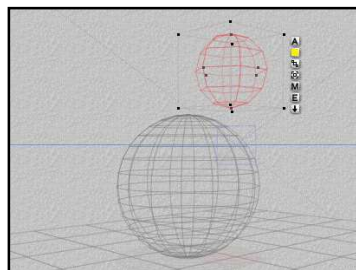
If we replace the point light with a conical spotlight the effect changes. This is the sort of lighting you would expect from a real spotlight.
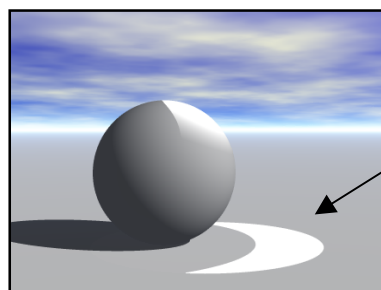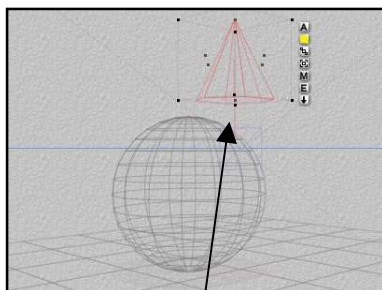
Notice that the spotlight creates a focused circle of light rather than a gradual spread

The single red line here represents the direction of light. If you think of the object as a flashlight this is the end with the bulb. You can direct your spotlight (flashlight) at a particular object or place in your scene by highlighting it and then rotating it using the rotate tool on the Edit Toolbar.
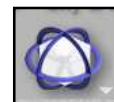
The Light Lab

As with most things in Bryce there are other options available by clicking on the **E**
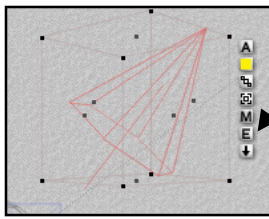
Clicking on the E beside a light object takes you into the Light Lab

Intensity changes the lights brightness

Click here if you want the light source to be seen

Use these settings to change the colour and intensity of shadows or to opt for no shadows at all

Click here to change the colour of the light

Click here to change the way the light disperses at the edges

Ghost Moon
Created using the Light Lab and a visible **point** light
Try creating something similar using the light settings below

Just For Interest

If you place a light inside a transparent object in Bryce it will be distorted by the object but still visible.
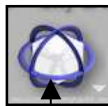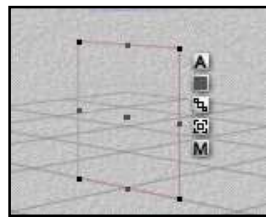
2d Objects
Photographs and Mats

You can use digital photographs in Bryce either as elements in your scenes or as materials for 3d objects

Photographs as 2d Objects

Clicking on the blue square or circle will create a **2d surface** to hold your photo. In the directors view this is placed at 45 degrees to the front of the scene. So the first thing you will need to do is turn your frame 45 (or –45) degrees using the rotate tool on the edit toolbar. Use the **y axis** only and keep one eye on the bottom left hand corner of your screen

Y Axis
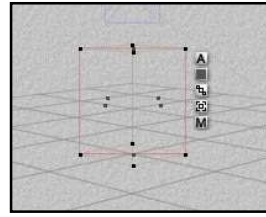
With your 2d object facing the front you can then resize it by dragging on any of the corners.

Getting your picture in the scene

With your 2d object highlighted go to the **Objects** menu. (At the top of the screen) and select **Edit 2d Pictures.** The window below will open.

Some picture types have what is called an alpha channel or mask. This allows you to import just the part of the picture you want and leave the rest transparent – as in the example – bit complicated for a beginner's course but could be handy for future reference.

What we need is just a plain old picture the quickest way to get to it is to click on one of the blank squares. This will take you to a browser window where you can locate your photographs. I have also clicked on the view icon and selected Thumbnails so I can actually see which picture I am choosing.
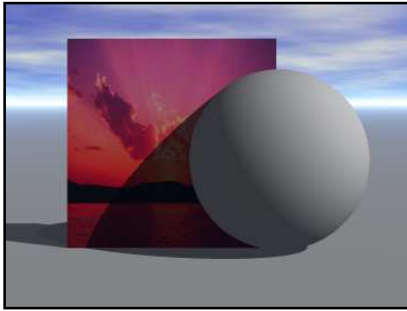

I chose the sunset and rendered it in my scene.

Note: In wireframe view you won't be able to see the picture except in the Scene Preview
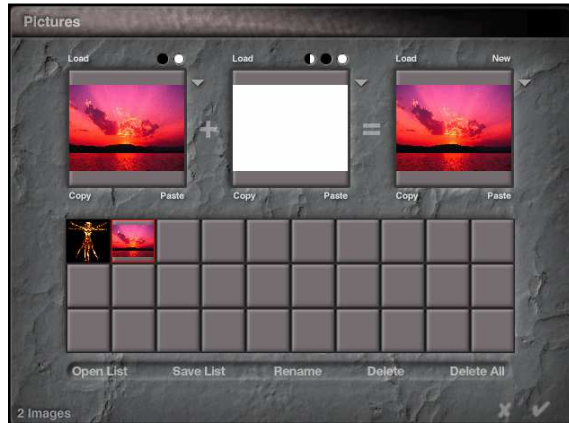
Photographs as Materials

Photographs can also be used as materials on 3d objects.
I have created a sphere in my scene but any 3d object would do just as well for this demonstration.
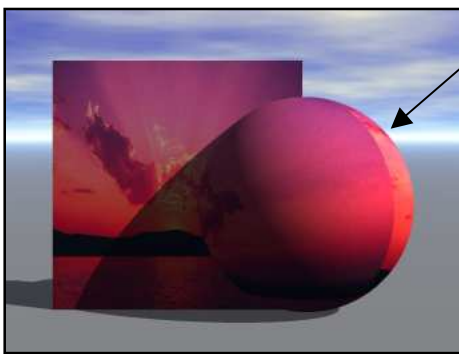

To apply my photograph as a material on the sphere I just need to have the sphere highlighted and go to **Objects** and Edit 2d Pictures again.


As you can see the sunset picture is still in the pictures library. I could click on it to select it or click on another blank square to load another picture into the library

I've taken the quicker option and here is the result.

Only problem is I have this line where the ends of the picture have been joined up

Clicking on the M will take me to the Materials Lab where I can soon fix this.
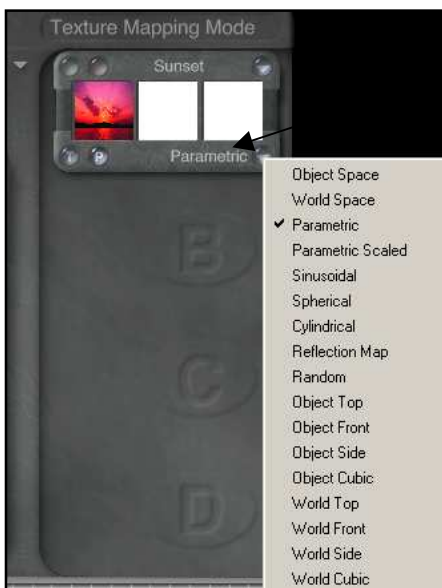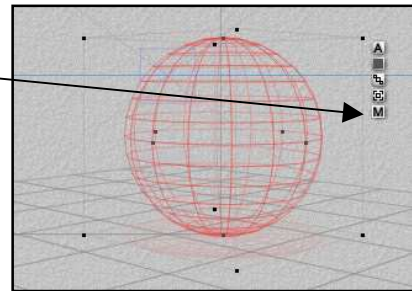
The default setting for materials is Parametric (not sure exactly what that means) but as my object is a sphere I need to choose Spherical from the drop down menu, check the Preview and click the tick. Now my sunset is wrapped nicely around the sphere.
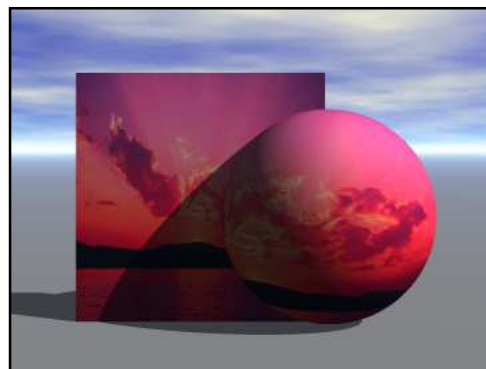
Note:
The Materials Lab can be accessed by clicking on any object that has the M (including 2d objects).
This means that you can apply things like transparency, shine, refraction and reflection to any material and make it totally unique. Trying making your photograph into a ghost image.

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