The Complete Guide to Blender Graphics

Supplement-03

Cell Fracture 2

In Supplement-02, Cell Fracture 1, Fracturing was demonstrated by using a Cube object to show how the Fracture Add-on divided an object, then by dropping a UV Sphere on to a Ground Plane. The number of vertices on the surface of the Objects (**Own Verts**) were used to determine the number of Shards produced with a maximum limit set in the Source Limit button (Figure 3.1).

Using the number of vertices on an object's surface (**Own Verts**) to determine how an object is Fractured is one of five options available. As seen in the **Operator Presets panel** under, **Point Source**, there are five options.
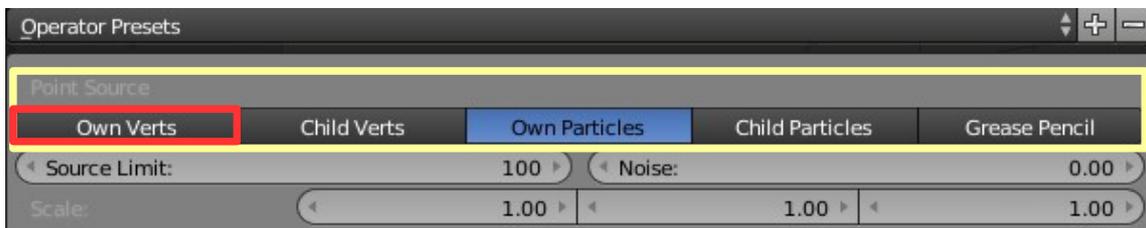
To demonstrate the options a simple Plane object will be used, extruded to give thickness and subdivided once. Subdividing once produces **18 vertices**.

Remember: By default, when an object is Fractured, the Shards are placed on Layer 2.

Own Verts   Figure 3.2
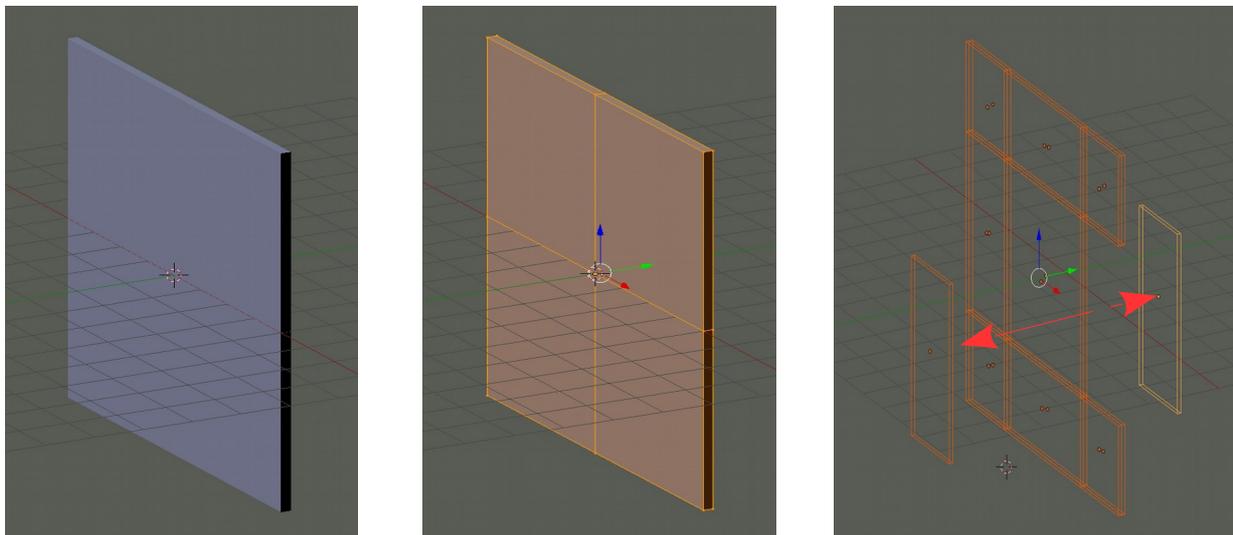
| Object Mode | Edit Mode | Layer 2 -Wireframe Display |

The diagrams above (Figure 3.2) show a Plane object, Subdivided once, producing 18 vertices on the surface mesh as seen in Edit Mode. When fractured 18 Shards are produced. The Shards are shown on Layer 2. Two Shards have been selected and moved to the side.

Child Verts

Using **Child Verts** means the vertices on the surface of a **Child Object** (an object parented to the mesh being Fractured) are used to determine the number of Shards produced. As well as determining the number of Shards, where the Child Object is placed affects where and how Shards are concentrated and arranged.

Object Mode   Edit Mode   Layer 2 -Wireframe Display
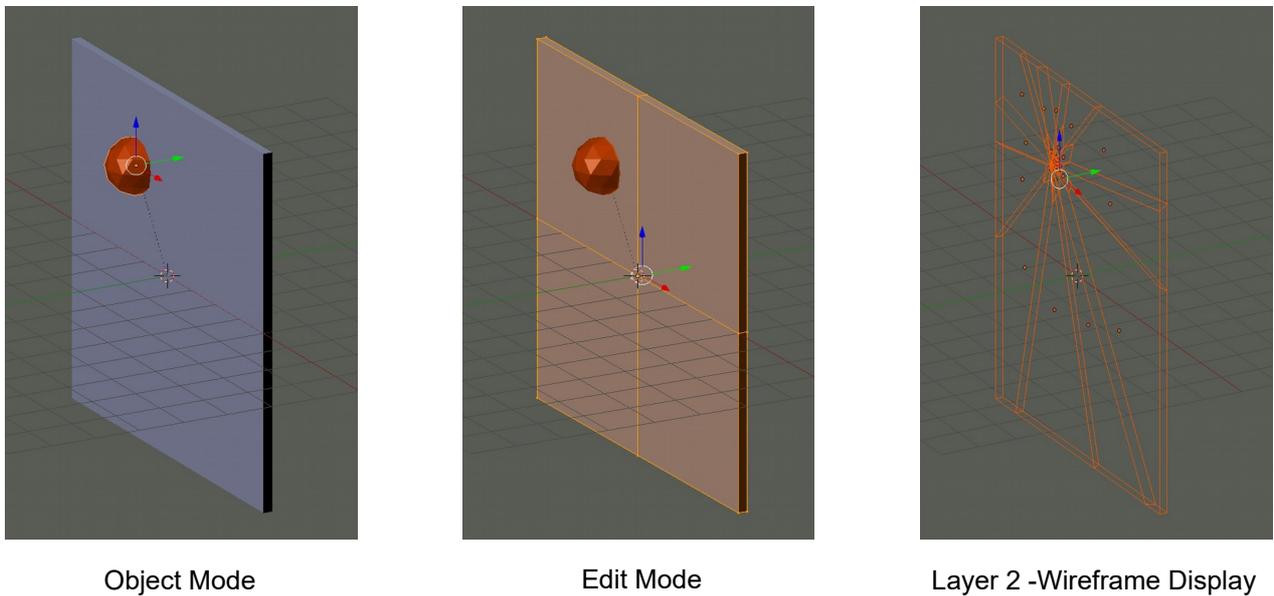
Figure 3.3 shows an **Icosphere** parented to a **Plane** (select the Icosphere, Shift select the Plane, press Ctrl + P key and select Set Parent to Object). The Plane has been extruded to give it thickness.

In the Cell fracture Operator Presets select **Child Verts**.

With the Icosphere positioned as show off center to the Plane, Shards are generated on Layer 2.

Own Particles

10 Particles   10 Shards
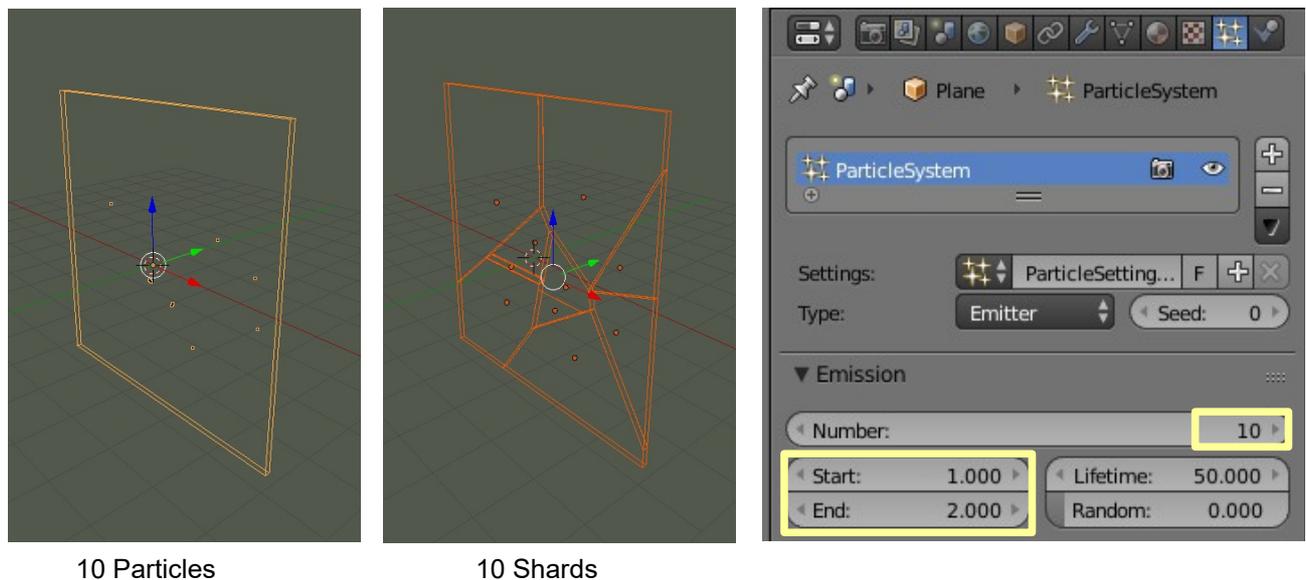
With a Particle System applied to an object, selecting **Own Particles**, Fractures the object producing Shards according to the number of Particles generated. In this example, 10 Particles are generated starting at Frame 1 and ending at Frame 2. With the particle animation paused at Frame 5 all particles have been generated, therefore, running Cell fracture produces 10 Shards (Figure 3.4).
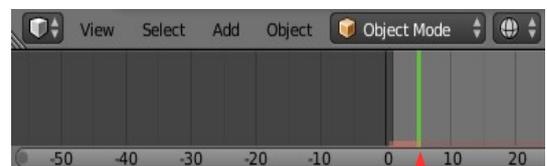
Frame 5 in the Timeline

Child Particles

Figure 3.5
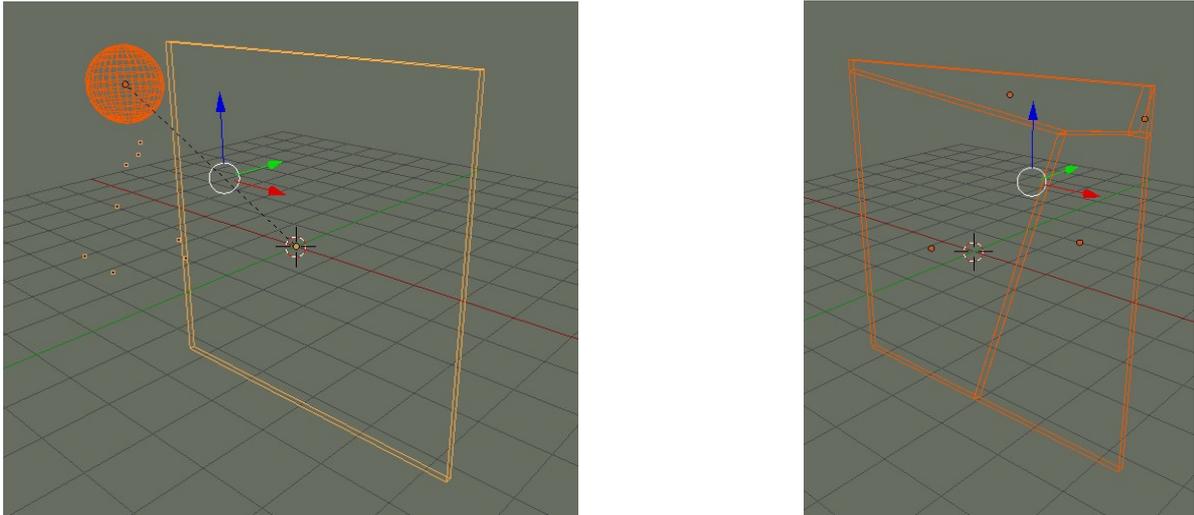
With a Particle System applied to an Object which is Parented to another Object (Child), the number of Shards generated from the Parent object is calculated based on the number of Particles generated by the Child.

Figure 3.5 shows eight particles generated from the UV Sphere (Child). The UV Sphere is Parented to the Plane. The Plane is fractured into four Shards.

Note: In this case, the number of Shards produced would appear to be half the number of Particles.

Grease Pencil

The Blender Grease Pencil performs a variety of functions but in regard to Cell Fracture, it will be considered purely as a device for marking lines on the surface of an object to determine how fracturing occurs.

Figure 3.6
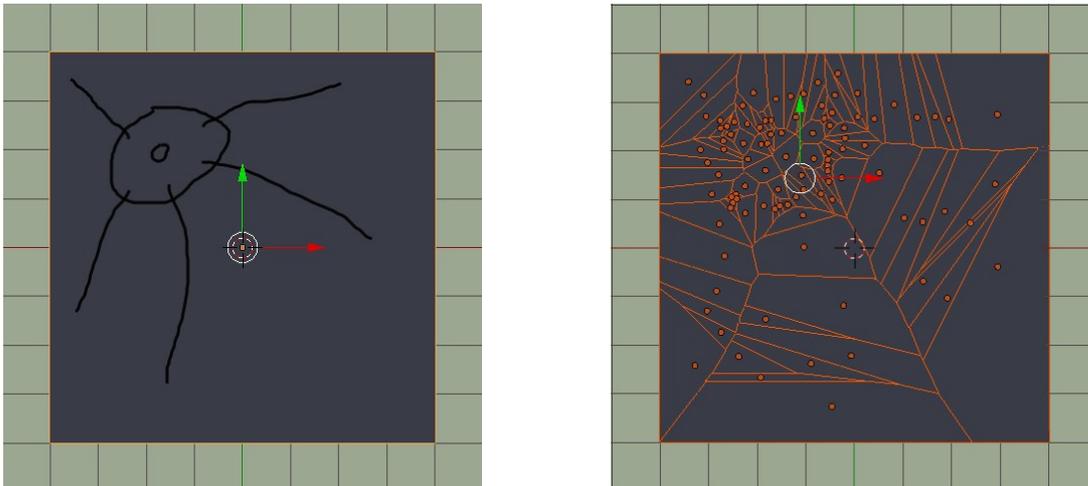
Figure 3.6 shows lines marked on the surface of a Plane object. The Plane has been extruded to give it thickness. Using the Cell Fracture tool with **Point Source**, Grease Pencil option selected produces Shards concentrated in the area of the circle and radiating out generally following the lines marked.

The Grease Pencil is found in the **Tools panel, Grease Pencil tab** at the left side of the Screen but to use it specifically to draw lines on an object that is selected in the 3D window you will find a duplication in the **Object Properties panel** which displays when you press the **N key**. Remember the settings and tools in the Object Properties panel are specific to the selected Object in the 3D window.

To use the Grease Pencil in the Object Properties panel to mark the selected object make sure the **Grease Pencil button** is checked and click on **Object**. Click on the **New Layer** button (Figure 3.7).

Clicking New Layer expands the panel (Figure 3.8).

For simplicity, the function of the options in the panel will be described in Supplement 07.

For use with the Cell Fracture tool simply press and hold the **D key** and **LMB click and drag** the paint brush cursor over the surface of the selected object (Figure 3.9).

Press and hold the **D key, RMB click and drag** the eraser circle to delete lines (Figure 3.10).

Paint Brush - Draw   Eraser Circle