Particle Systems

Month 2, Lecture 7

What we will learn today:

- Where particle systems are used
- How to make particle systems
- The particle view dialog box
- Particle foliage
- Other particle examples
- Altering particles with forces

PARTICLE USAGE – SUPER SPRAY

Water Fountains

PARTICLE USAGE – SUPER SPRAY

Waterfalls

PARTICLE USAGE - BLIZZARD

Snow (not tigers)

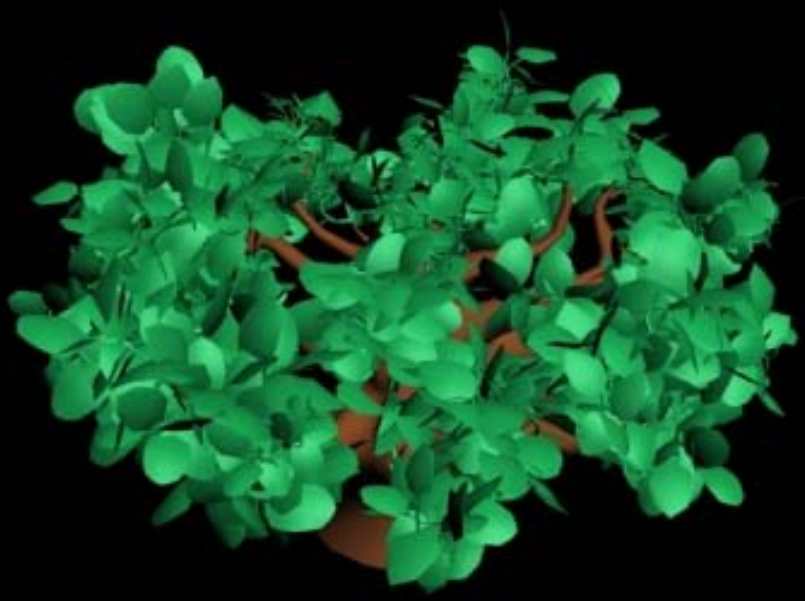
PARTICLE USAGE - BLIZZARD

Snow / Blizzard

PARTICLE USAGE – P ARRAY

Explosions

PARTICLE USAGE – P ARRAY



Shrubs

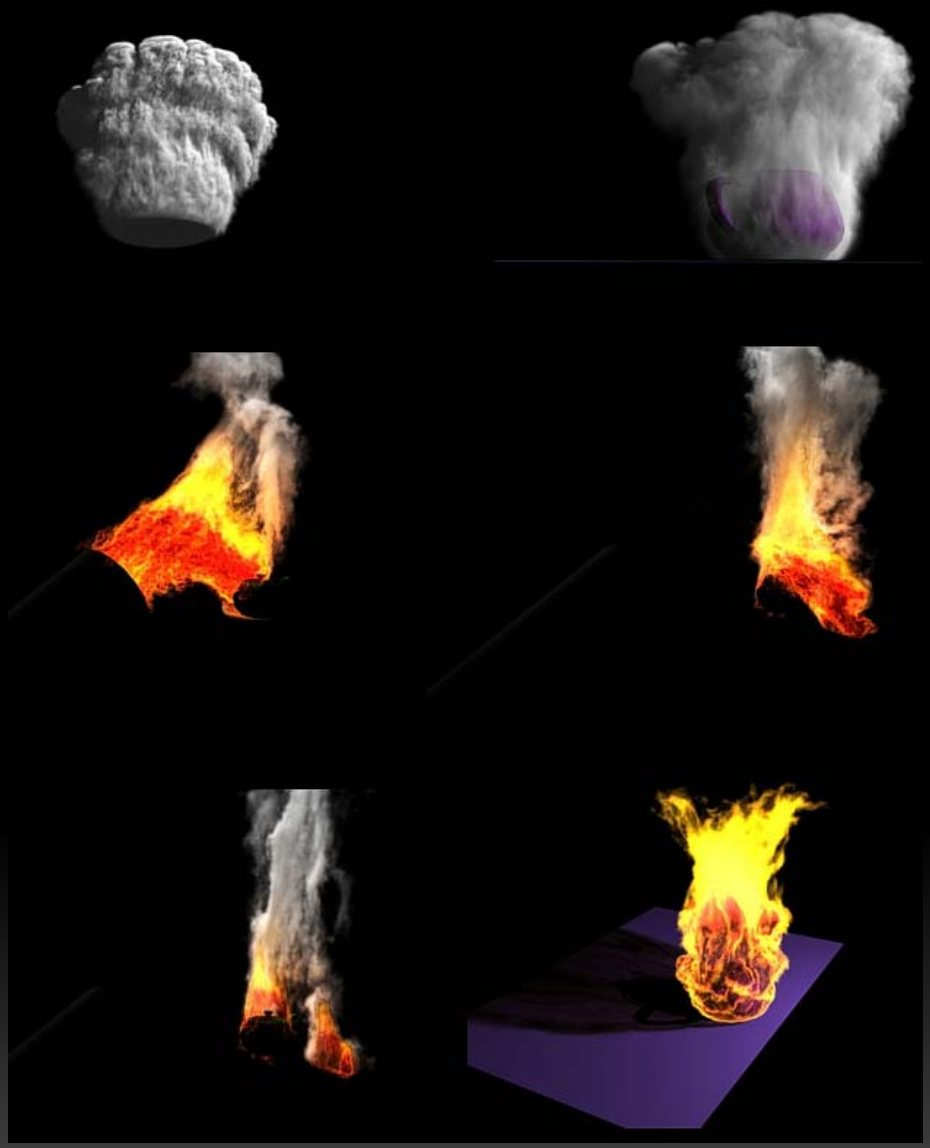
PARTICLE USAGE – P ARRAY

Custom Trees

PARTICLE USAGE – P CLOUD

Bubbles in Soda

PARTICLE USAGE - COMBINATION



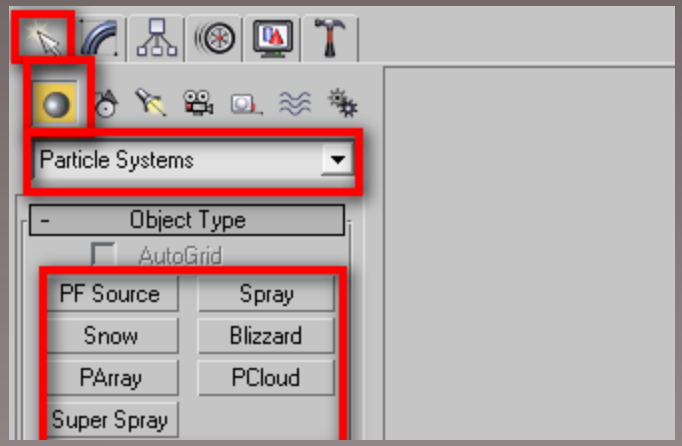
Smoke and Fire

PARTICLE USAGE

Anything you can imagine.

Particle Systems

- Particle system- an object that generates non-editable sub-objects, called *particles,* for the purpose of simulating snow, rain, dust, foliage, smoke, etc…
- Create Tab > Geometry > Particle Systems



Emitter Types

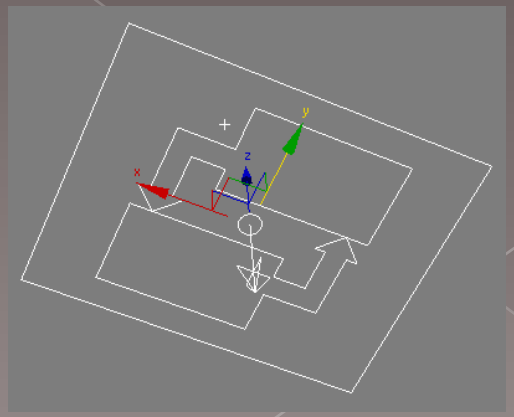
The first step to achieving the look you want

Particle Emitter Types

- PF Source
- Snow
- PArray
- Super Spray
- Spray
- Blizzard
- PCloud

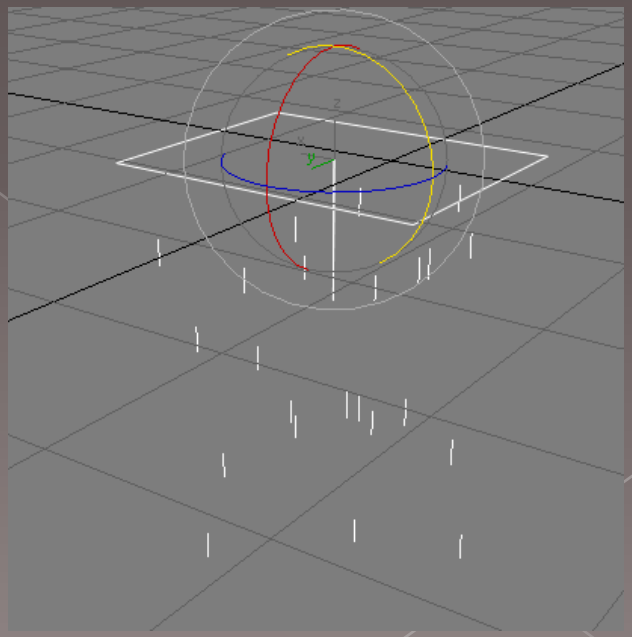
PFSource

- Default icon designating where particles are emitting from
- Doorway to the Particle View Editor
- Used for a huge variety of things



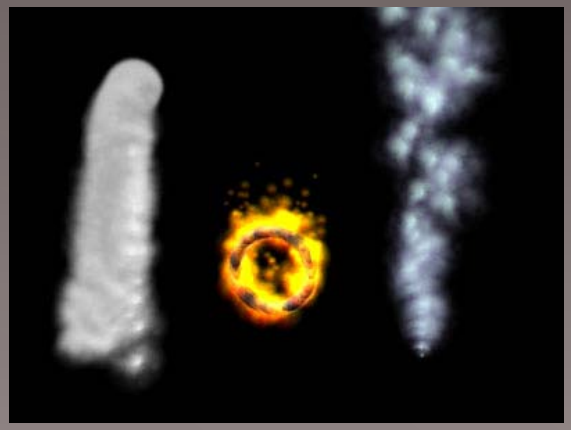
Spray

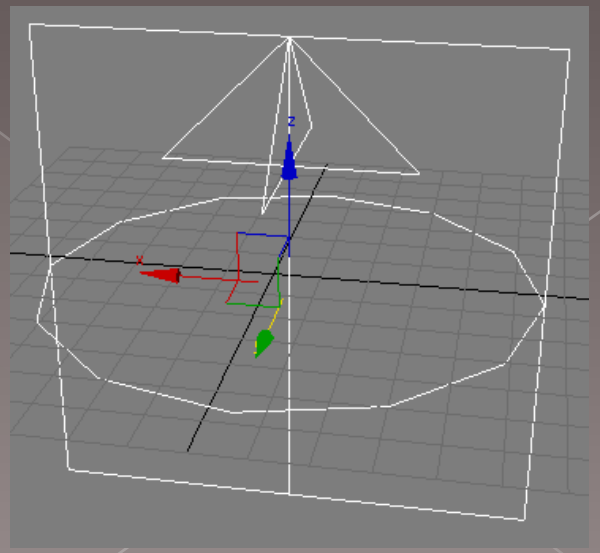
- Simulates water drops such as rain, fountains, and garden hoses
- Less advanced than Super Spray



Super Spray

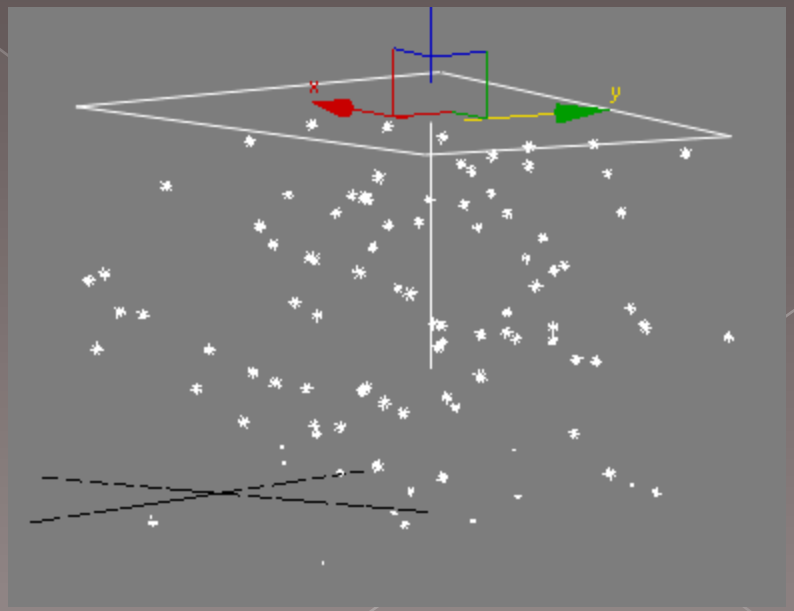
- Emits a controlled spray of particles.
- Similar to Spray with extra funtionality provided by all the newer particle systems.
- Used for water fountains, bubbles, smoke trails, flowing water, crowds





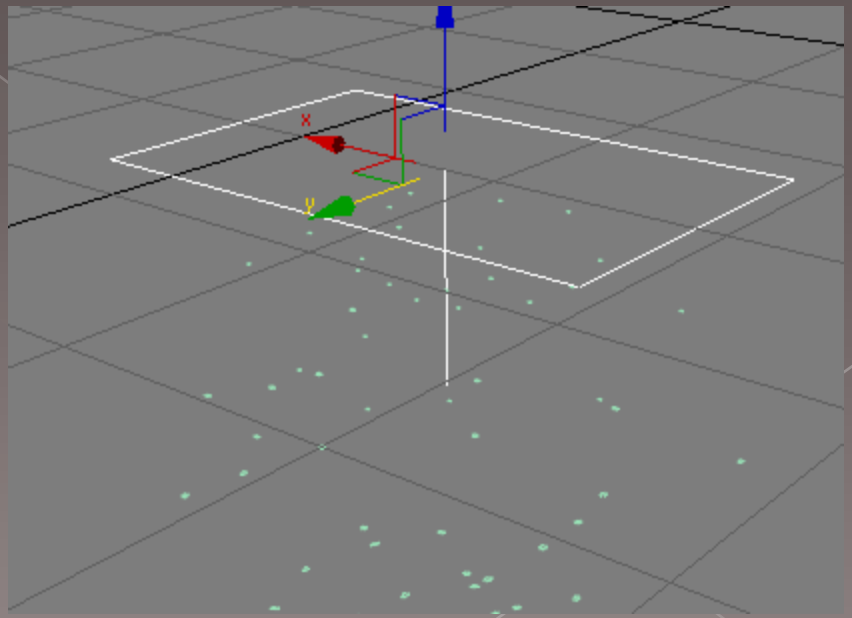
Snow

- Simulates falling snow or confetti. Similar to Spray, but with additional parameters to generate tumbling snowflakes
- Simpler Version of Blizzard



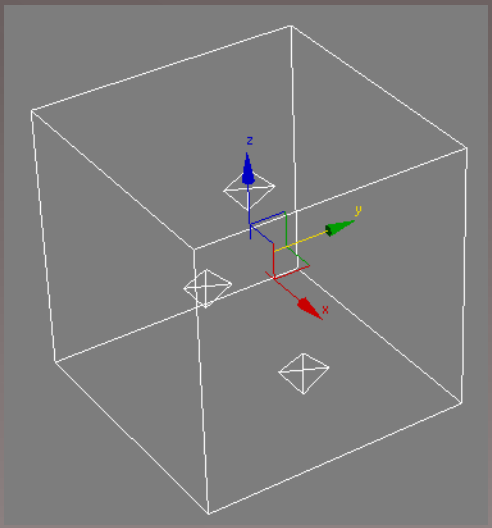
Blizzard

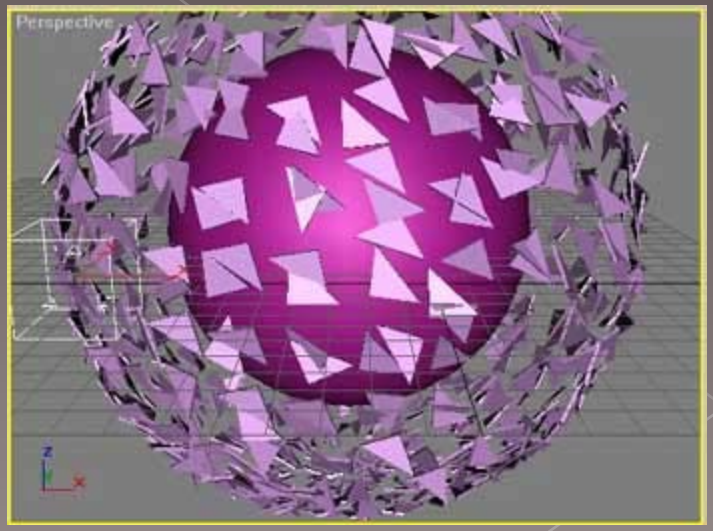
- Advanced Version of Snow
- Can be used for: snow, rain, crowds



PArray

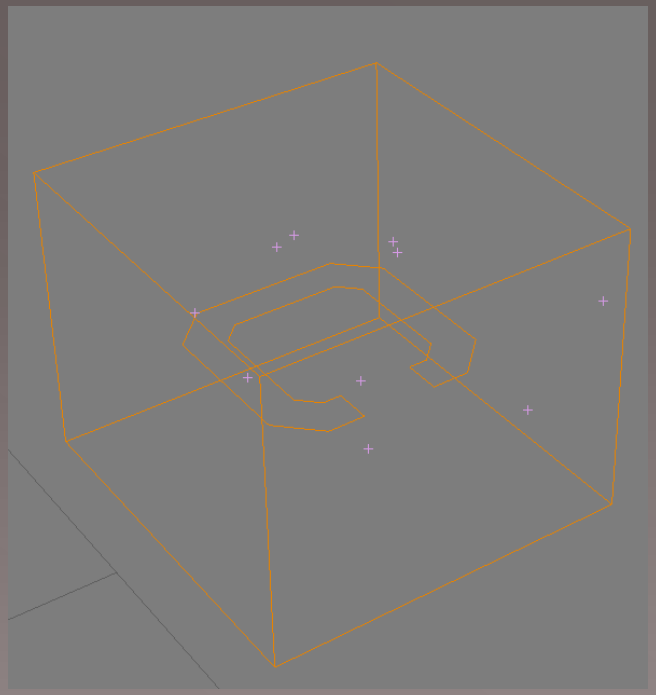
- Uses another object as its emitter
- Used for: Blowing things up (usually teapots), Crowds (ants, birds, bees)

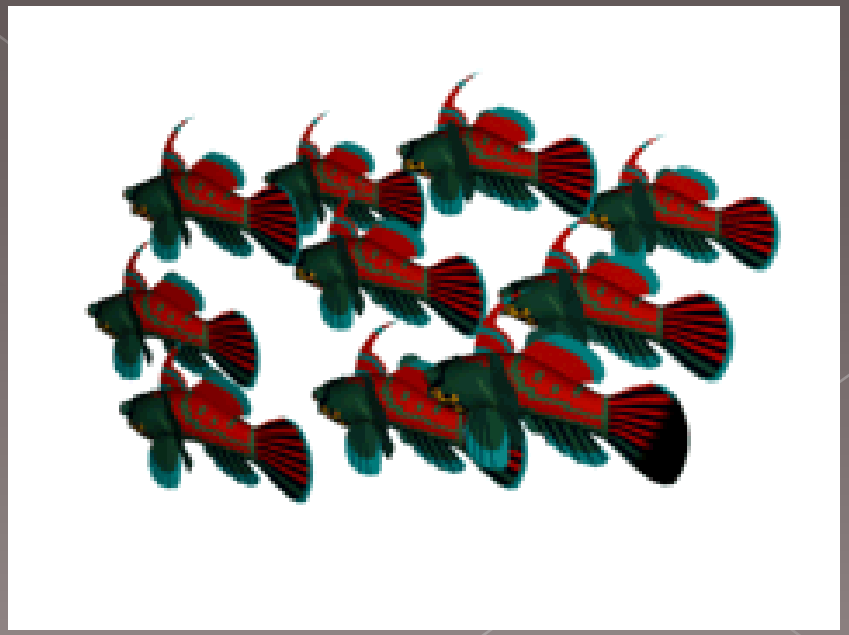




PCloud

- Constrains particles within a specified volume
- Used for: Bubbles in soda, Crowds (bugs in a jar, birds in a cage)



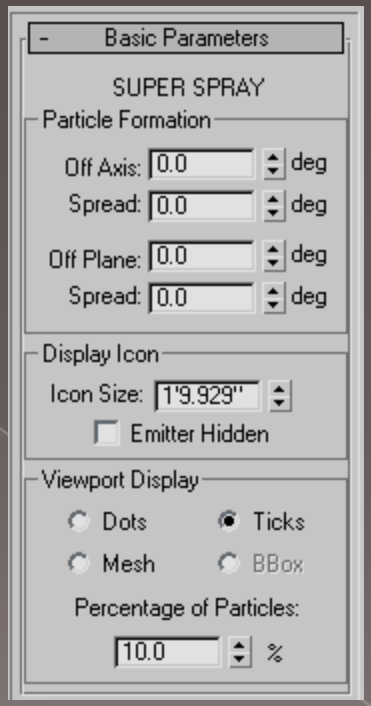


Controlling Particles

What do all those parameters mean?

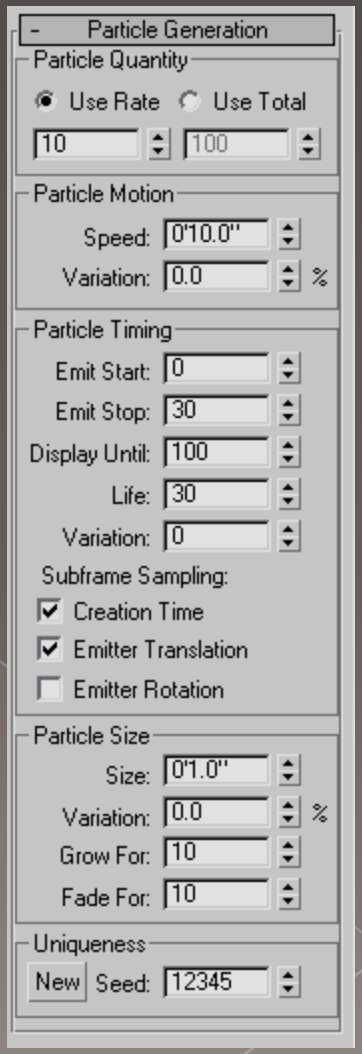
Basic Parameters

- Controls how the particles leave the emitter and how you see them



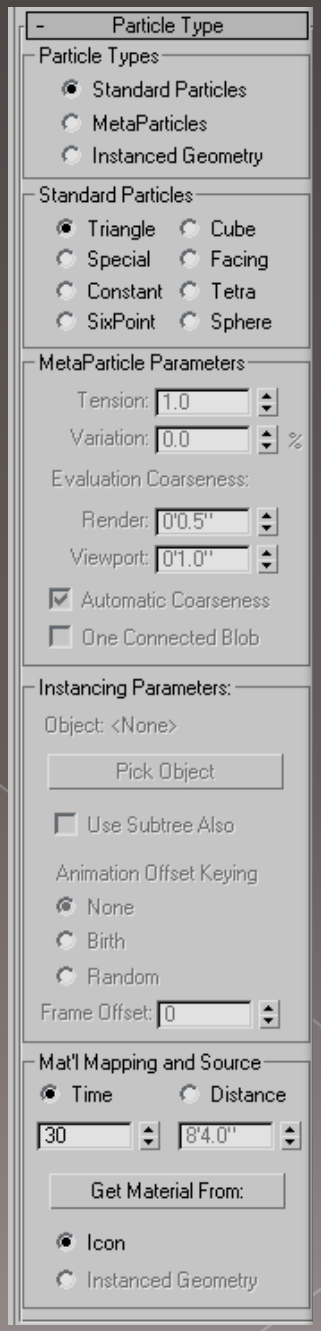
Particle Generation

- Controls the amount, timing and size of the particles



Particle Type

- Controls the type if particles and the geometry they are made of



Rotation and Collision

- Controls how / if the particles rotate and inter-collide

Bubble Motion

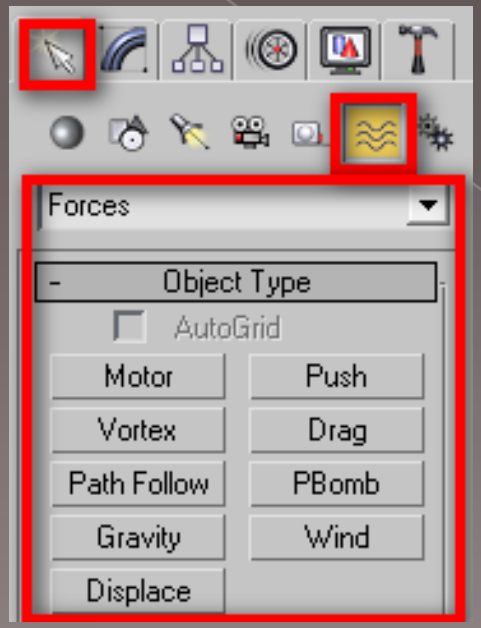
- Used to create bubble effects

Controlling Particles Externally

Forces and Spacewarps

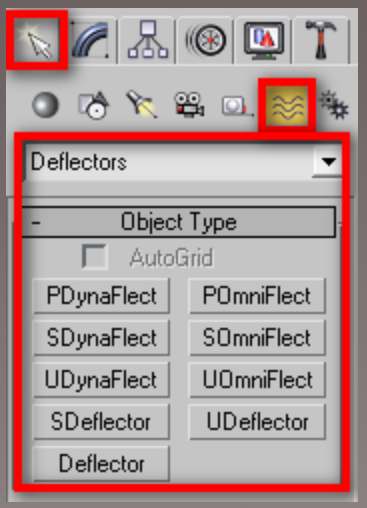
Forces

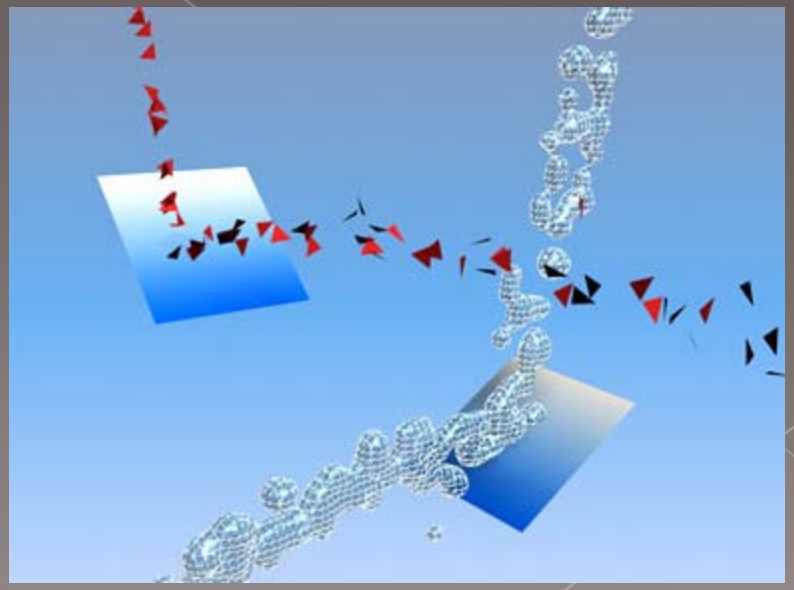
- Let you influence particles externally
- Simulates wind, gravity, etc.



Deflectors

- Acts as a shield to deflect particles off of an object
- 2 Main options:
  - Deflector – for planar objects
  - Udeflector – to use an object as a deflector





Bind to Space Warp

- Used to attach a selected object (usually a particle system) to a Force or Deflector
- Click and drag, a slight screen flash will let you know you are successful

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- How to make particle systems
- The particle view dialog box
- Particle foliage
- Other particle examples
- Altering particles with forces

What we learned this month:

- Modeling architectural objects
- Setting up templates
- Organization
- Materials (Arch & Design and Standard)
- Photometric Lighting
- HDRI Lighting
- Particle Systems

Next Month

- Animation
- Wire Parameters
- Physics (Reactor)
- Character Animation
- Cameras
- Compositing