## **Basic 3D animation using Blender**





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# **Animation basics**

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### Outline



- What is animation?
- How is it done?
  - Timeline
  - Keyframes
  - Interpolation (in-betweens)
- Process (Connect the earlier concepts of transformations/manipulation)
  - Location, scale and rotation
- Applying the animation using Blender



## **Animation**



'giving life to'



## How to do it



#### By adding motion/movement to the objects

- Puppets
- Drawings
- Images
- Objects
- 3D models ...etc



## 3D animation: Key framing



Positions within the action, which are at the juncture of a changeover are termed as key-frames.

Elements of the 3 dimensional mesh are transformed, to create the appropriate motion.

Key frames are added at the appropriate positions.

## 3D animation: In-betweening



Actions in-between the key-frames are the in-betweens.

In the age of hand drawn (cell) animation, there were in-between artists to create the in-between drawings.

In digital animation: Computer interpolates the vertices in the key-frames and creates the in-betweens as per the timeline.

Computer also allows to modify, redo, customize the in-betweens.

### Animation: Then and Now



Then

Animator
Keyframes
Inbetweener
Inbetweens

Now

Animator

Keyframes

Computer

Inbetweens

## Sessions



Basic animation in Blender

Principle of animation: Stretch and squash

Process to apply the animation principle in Blender