

# I. Principles of Animation

Utilizing the principles of animation are key to adding appeal and giving the items you animate life and personality.

## A. Timing

Timing is everything **Book**: Timing has a huge impact on the way things move, so the study of timing is really important. Remember too that it is not enough just to make an object, or a character move arbitrarily.

### 1. Conveys Meaning and creates Mood

- a. fastness, slowness, subtlety or impact
- b. Timing can give meaning or increase tension
- c. Speed and excitement
- d. Contemplation and Calm

### 2. It defines the object

- a. Weight or lightness
- b. Why it is moving

### 3. It's like the beat of music and requires practice and experience to master

### 4. Working with type

- a. Too slow is boring
  - i. Typically students' pacing is too slow when animating movement and scene change
- b. Too fast can be unreadable

Typically students do not leave enough time for users to read text

  - i. Read the copy yourself and time it, then double that time.

### 5. Train your eye

- a. Watch TV commercials paying special attention to how fast the scenes change and how fast elements (text, shapes, etc.) move. And how the move to depict meaning

## B. Arcs of Motion

### 1. Items moving through the air generally don't move in straight lines (gravity simulation)

- a. Especially true if you are presenting something in real life like a ball being kicked in the air.

2. Doesn't just apply to baseballs
  - a. Movement of arms, walking, etc.

### C. Ease in & Ease Out

slowing in and slowing out

1. Items in motion in the real world speed up and slow down gradually
2. The idea is to simulate physics of the real world (inertia, friction) but still know that you're in a pretend world

### D. Squash and Stretch

Though you usually don't see real world object squash or stretch in the animated world it makes the movement seem more convincing to the viewer

1. Object squashing when stopping and stretching when sent off
2. The idea is to simulate the physics of the real world (gravity)
3. Takes the rigidity out and adds life to the object

### E. Weight or weighted movement

Objects move differently depending on their weight

1. Bounce
  - a. Even a bowling ball bounces a little bit
2. Speed

### F. Anticipation / Holds

People stop and think. Actions in the real world don't happen at a perfectly even pace

1. Holding
  - a. Holding / freezing expression can communicate thinking or contemplation
  - b. Gives the audience time to sink things in and predict the next action
  - c. Allows you to communicate without words or dialogue
2. Anticipation
  - a. A pause before the action starts.
  - b. Fred Flint-stone kicking his leg back before running.
  - c. The setup for the motion

## G. Follow through

1. Opposite of anticipation
2. The little extra that happens when an object stops
  - a. Bounce back and forth
  - b. Hair moving slightly forward

## H. Exaggeration / Emphasis

1. Making an element extreme, like movement or scale.
2. Exaggeration is used to accent an action.
3. It should be used carefully