Source: KBPhysicsMasterIndex

1 | Special Relativity

- If events are apart for observers to see, two observers have to record the time and compare notes
- It will take time (sound/light) from an event to get from the event to the observer; the travel time needs to be taken into account, and if the objects are moving, calculating time travel would be extremely tricky
- Human senses also have certanty

1.1 | Space and Time

- Because it is impossible to observe a result independent of a refrenece point, each observe would idealy want a clock of identical construction
- Laws of inertia (newton's first law) is not true for every coordinate system, i.e….
    - The rotationon of the Earth, if we set the coornate 0,0 at the center of Earth, causes everything around earth to seem to be rapidly rotating around earth
    - Hence, it would seem like a force would be wildly acting upon all objects around Earth for their velocity to accelerate rapidly
- If an object is translating through one coordinate system, it would be uniformly translating to another coordinate system of the same type that itself is uniformly translated uniformly

1.2 | The Principle of Relativity

Note: this is not the theory of relativity

Laws of Physics should be the same in all inertial refrence frame.

- Classical mechanics => does apply
- Electromagnatism => not sure

If the principle of relativity were not to be true,