Scalar or vector

Describe the difference

5 m/s

5 m/s DOWNWA

Circular Motion

Learning Targets

- Describe the effects of balanced and unbalanced forc
- Describe Centripetal Force
- Explain Inertial Mass

Forces are balanced

Objects at rest

Stay at rest

Objects in motion

Stay in motion

(same speed and/or direction

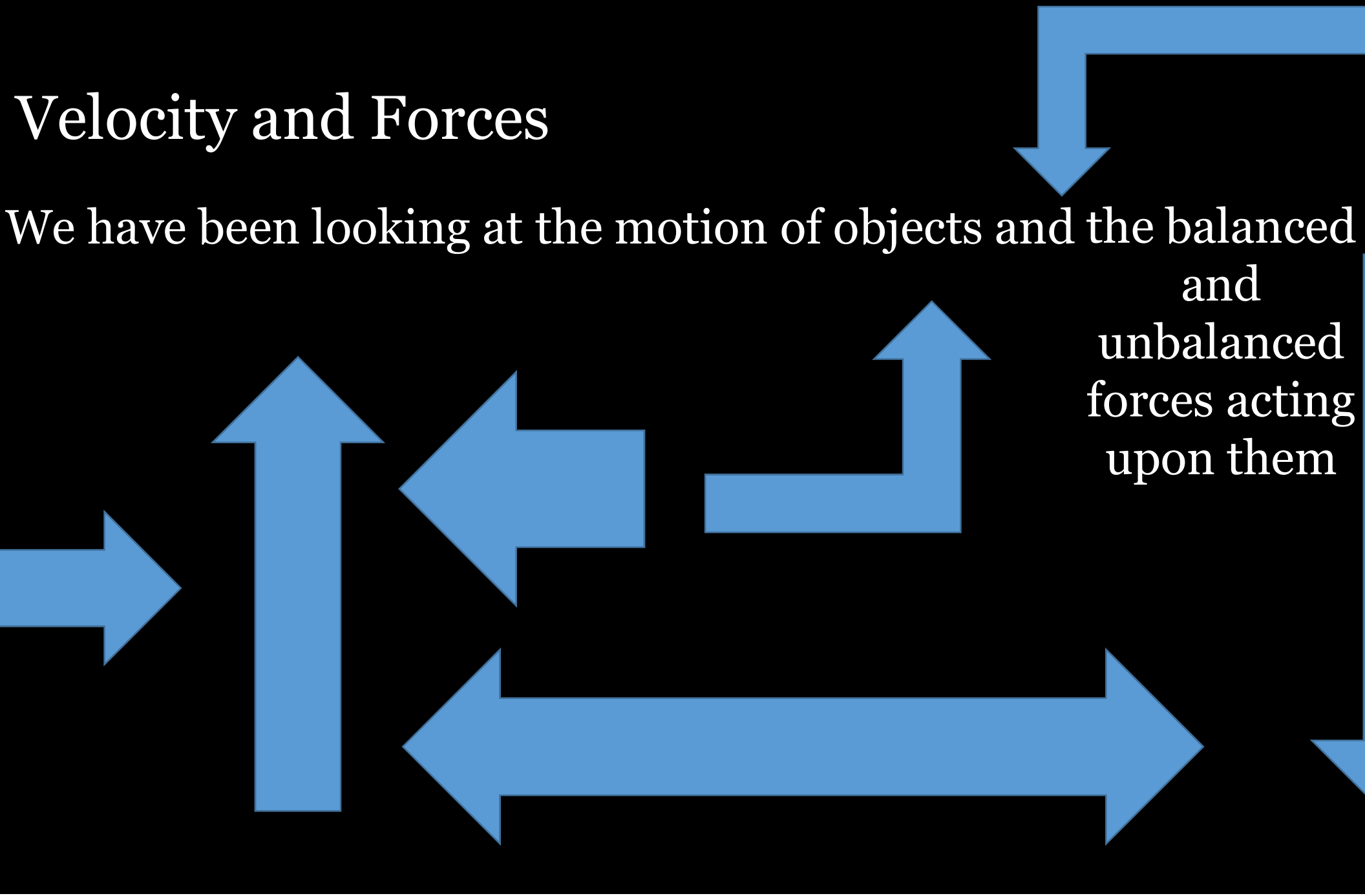
Forces are unbalanced

ject accelerates
ject decelerates

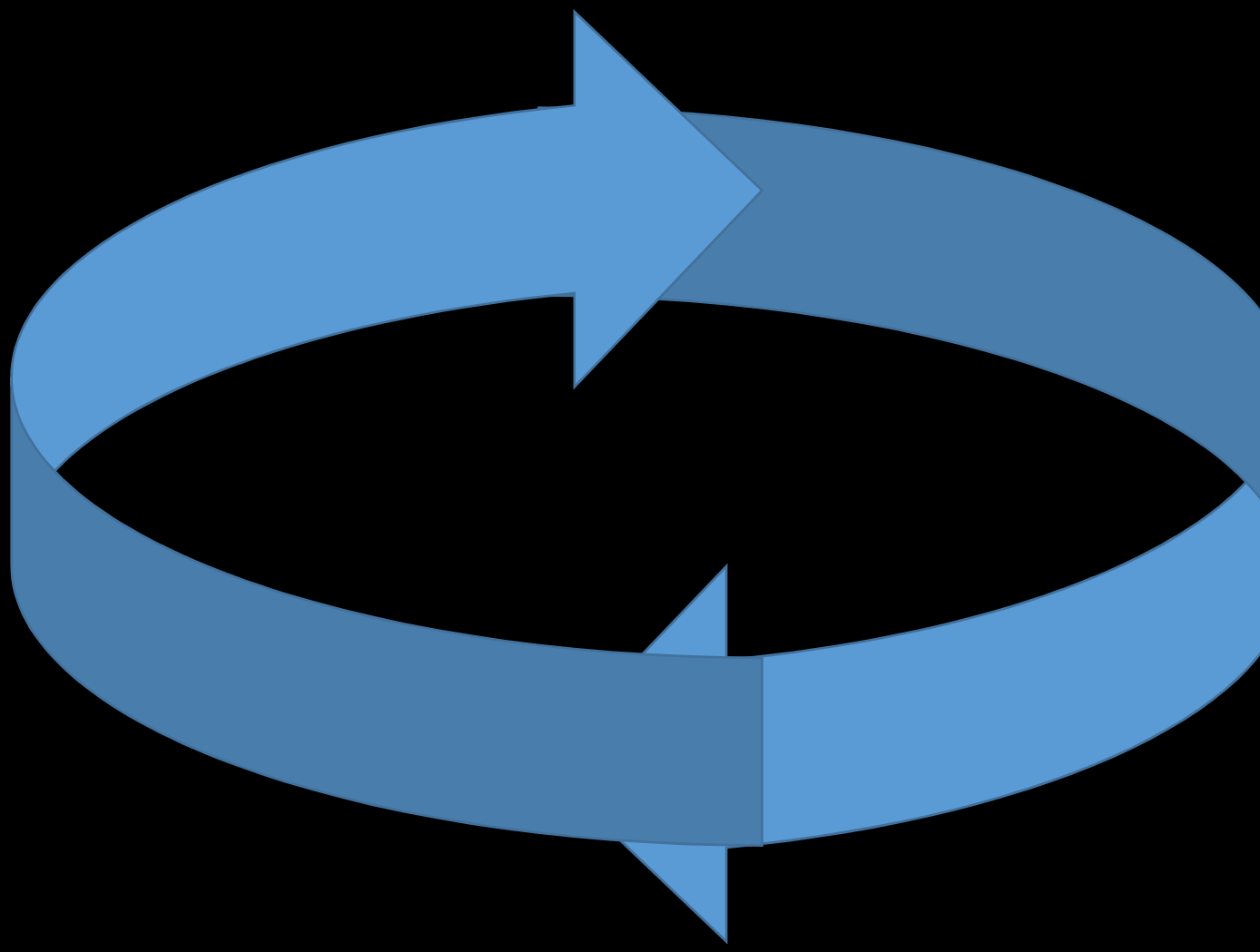
Object changes
direction

Velocity and Forces

We have been looking at the motion of objects and the balanced and unbalanced forces acting upon them



at are the forces
nd their effects
ting on a object
moving in a
rcular motion



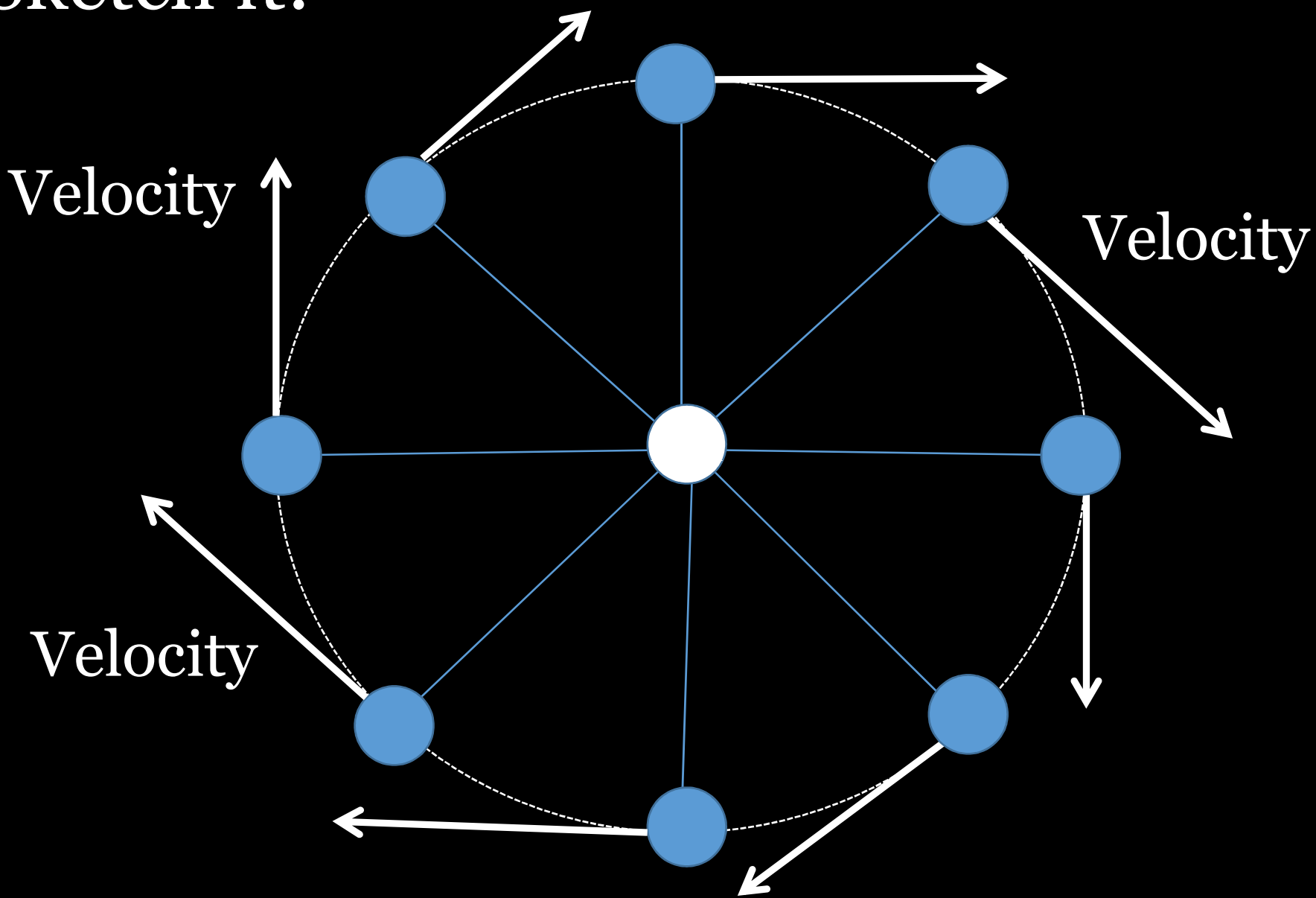
Velocity – if speed and direction changes then forces are ?

So

If velocity changes, what forces are in action ?

Are the forces balanced?

Sketch it!



Circular motion requires a force because the object is constantly changing direction

We call this force the
CENTRIPETAL FORCE

CENTRIPETAL FORCE

Inertial mass is the mass of a body when it is accelerating by a force other than gravity

Circular Motion

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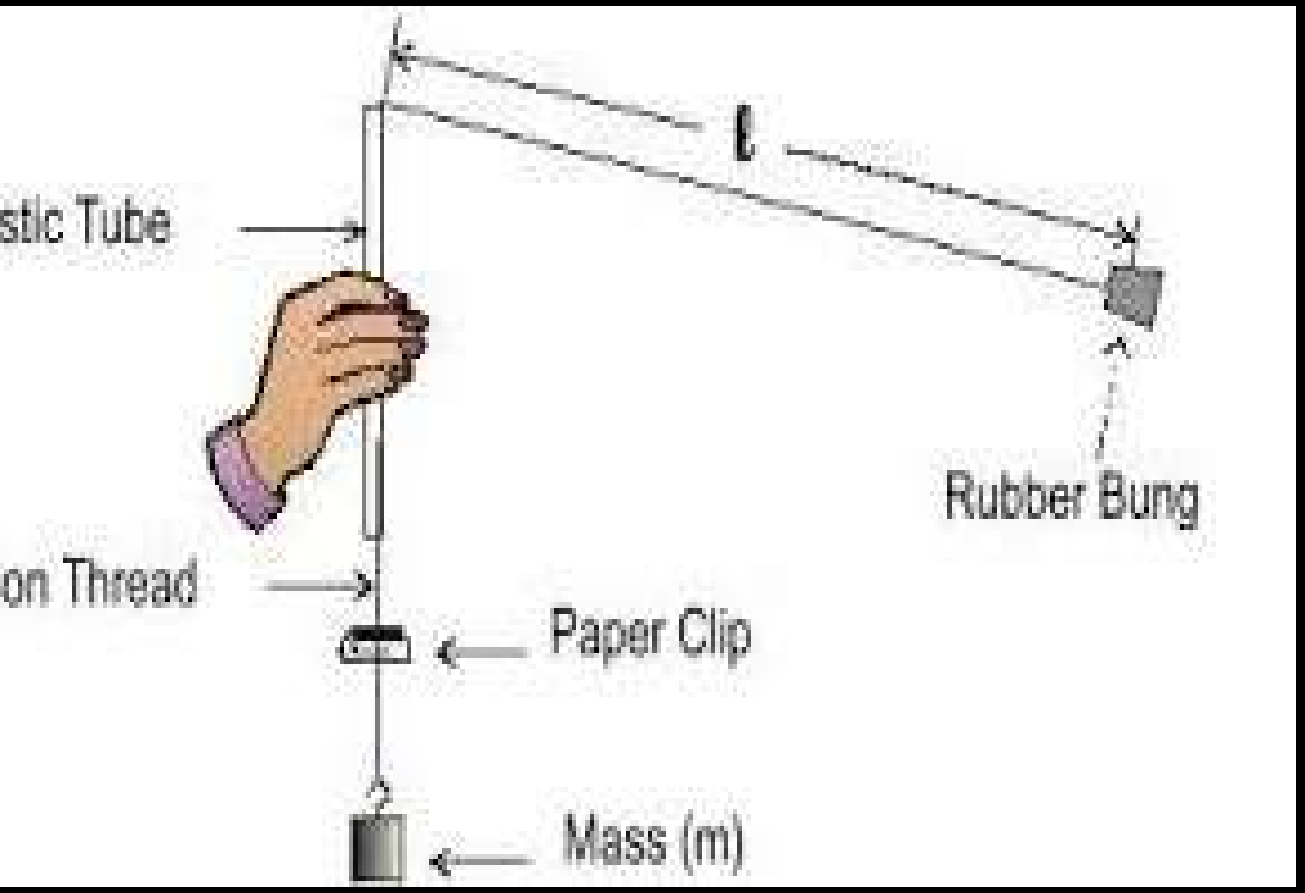


Can anyone tell me how we are going to investigate the forces at play with circular motion

Safety!

Everyone put on safety goggles!

DO NOT let go of the string or swing it wildly/in people's way!

Assign the following roles:

- Materials Handler
- Observer
- Observer
- Experimental Engineer

SWITCH roles after each experiment

Try to answer the question I give you after each experiment (observers, make some notes!)

3

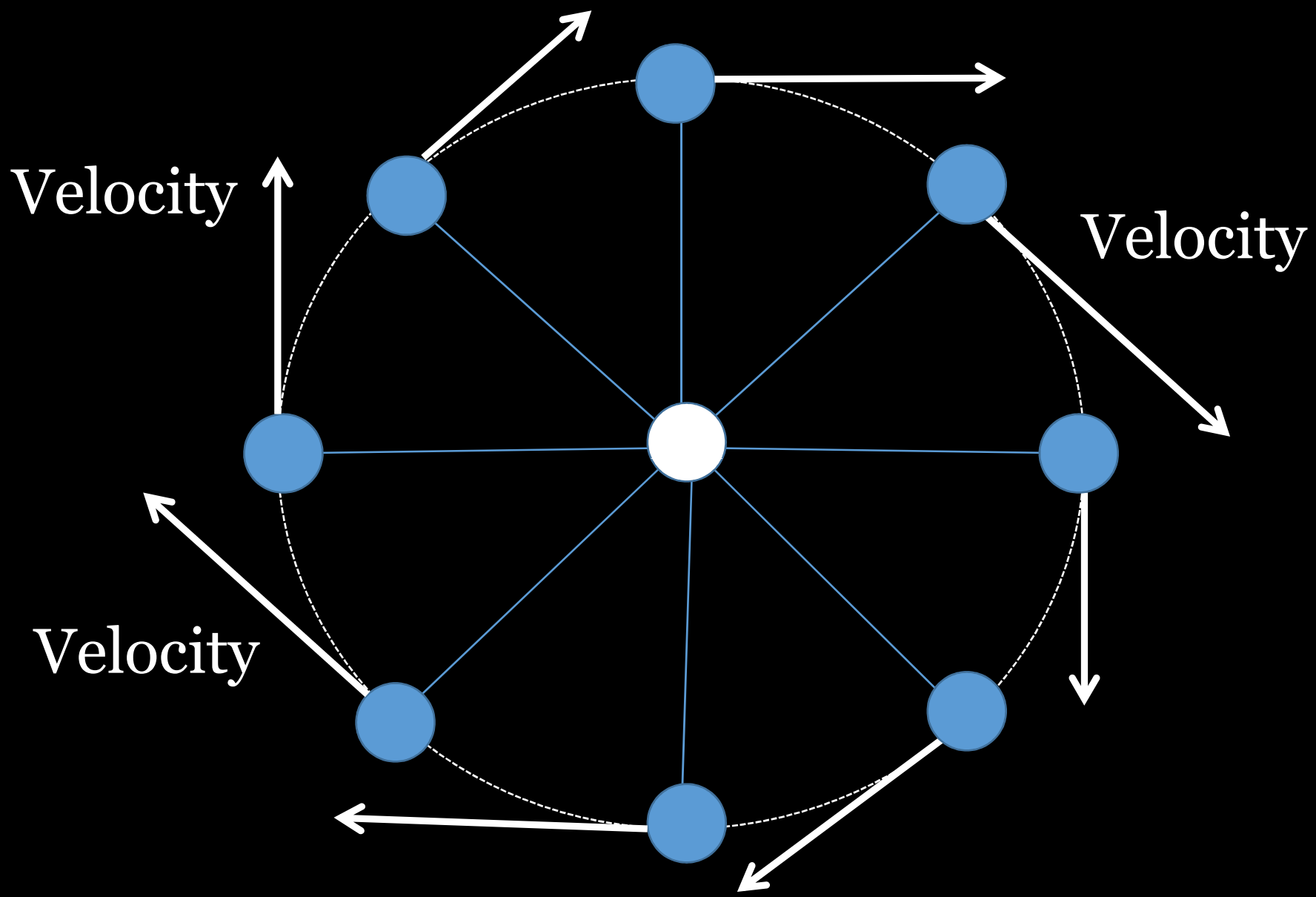
sts to perform

1. Swing the rubber stopper. Can you fee where the force is coming from?

2. Swing it faster. What do you feel?

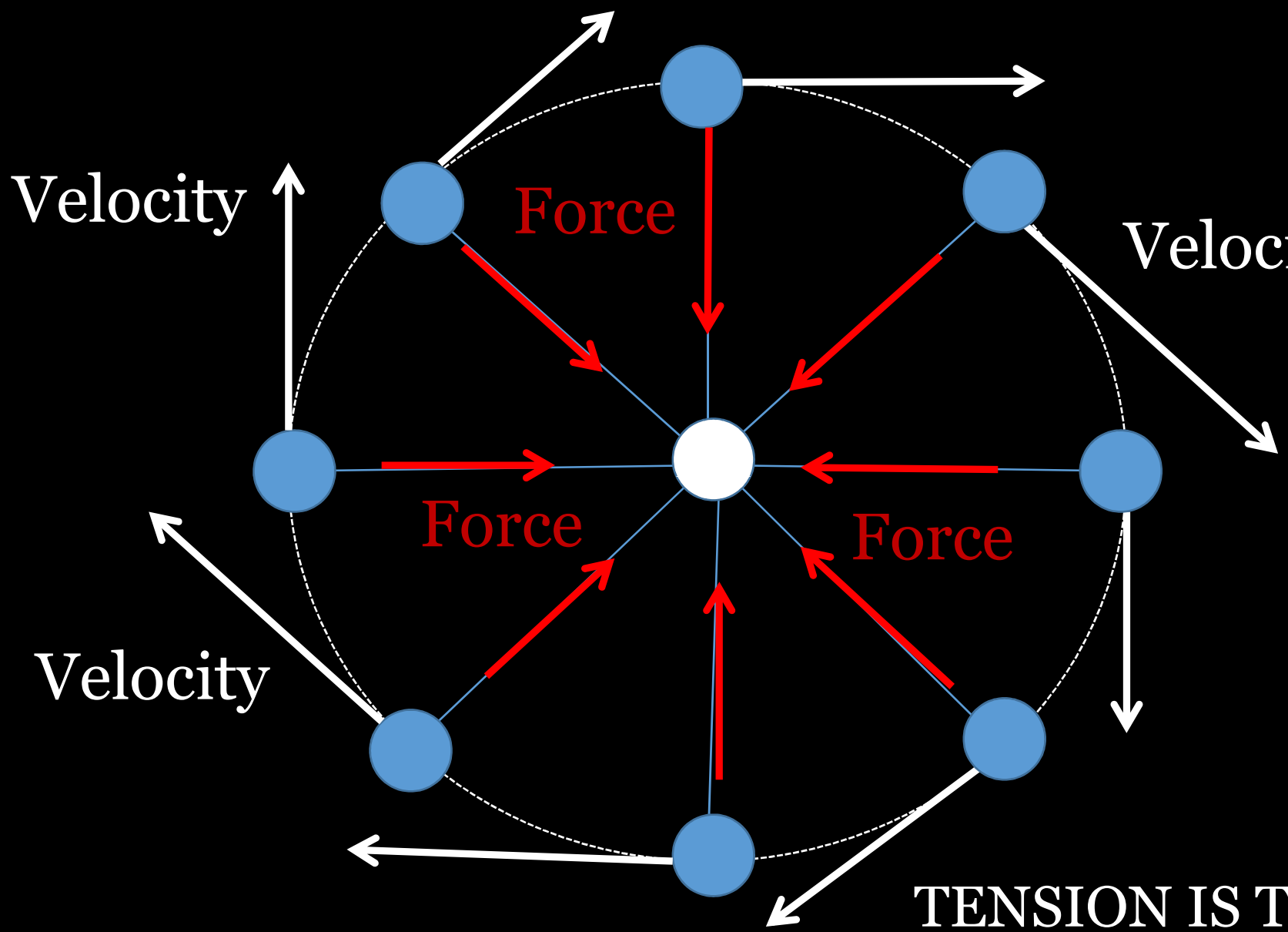
3. Increase the size of the circle. What is happening and why?

WHERE WOULD YOU DRAW THE FORCE ARROW?



WHAT IS CAUSING THE FORCE

FORCE IS ACTING INWARDS: PULLING THE RUBBER STOPP



TENSION IS THE FORC

and the

Circular Motion

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https://www.youtube.com/watch?v=bpFK2VCRHUs

Circular Motion

Learning Targets

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hoose appropriate words to fill in the gaps below

n object will only move along a _____ path if it is
onstantly acted on by a centripetal _____.

ne force is always directed _____ the centre of th
rcular path.

entripetal force _____ if the object moves in a
naller radius path or at a _____ speed.

n example of a _____ force is the Moon orbiting
e Earth due to the Earth's _____ pull on the
oon.

towards
vitational
increases
greater
centripetal
force
circular

Choose appropriate words to fill in the gaps below:

n object will only move along a ___circular___ path if it is
onstantly acted on by a centripetal ___force___.

he force is always directed ___towards___ the center of
he circular path.

entripetal force ___increases___ if the object moves in a
maller radius path or at a ___greater___ speed.

n example of a ___centripetal___ force is the Moon orbiting
he Earth due to the Earth's ___gravitational___ pull on the
Moon.

towards increases greater

vitational centripetal force circular