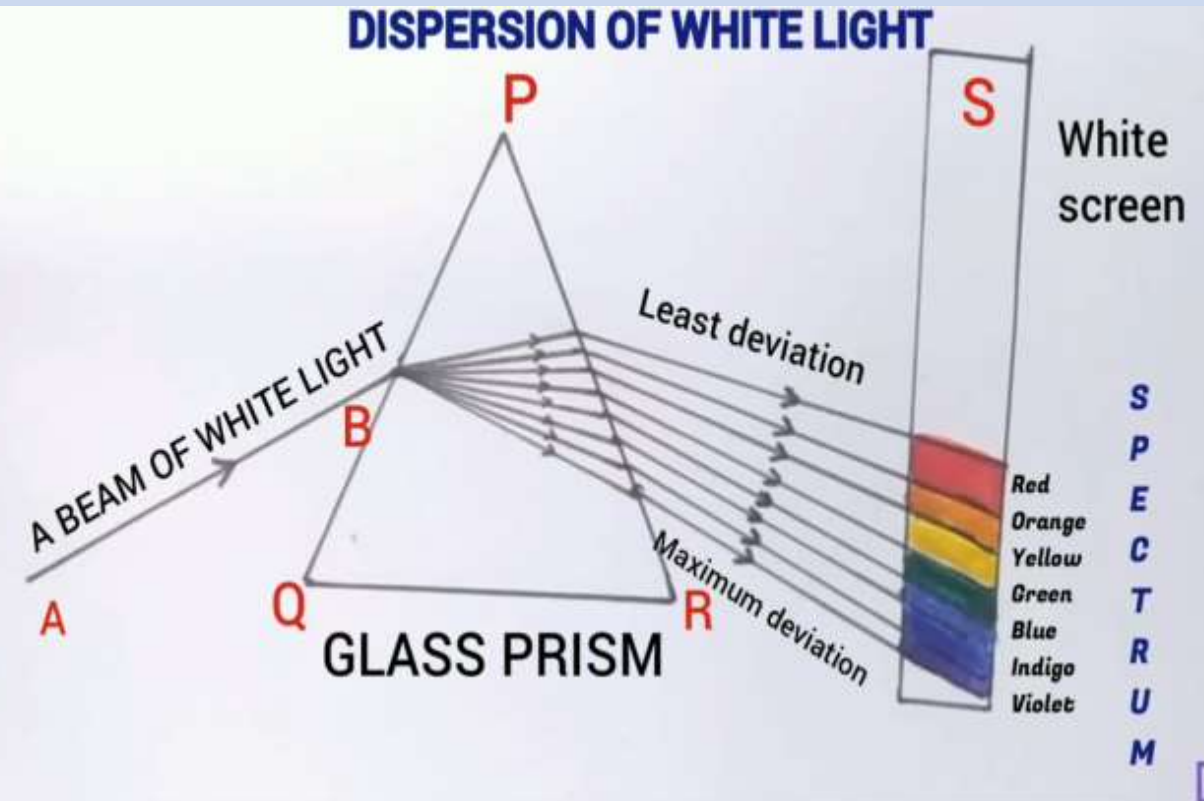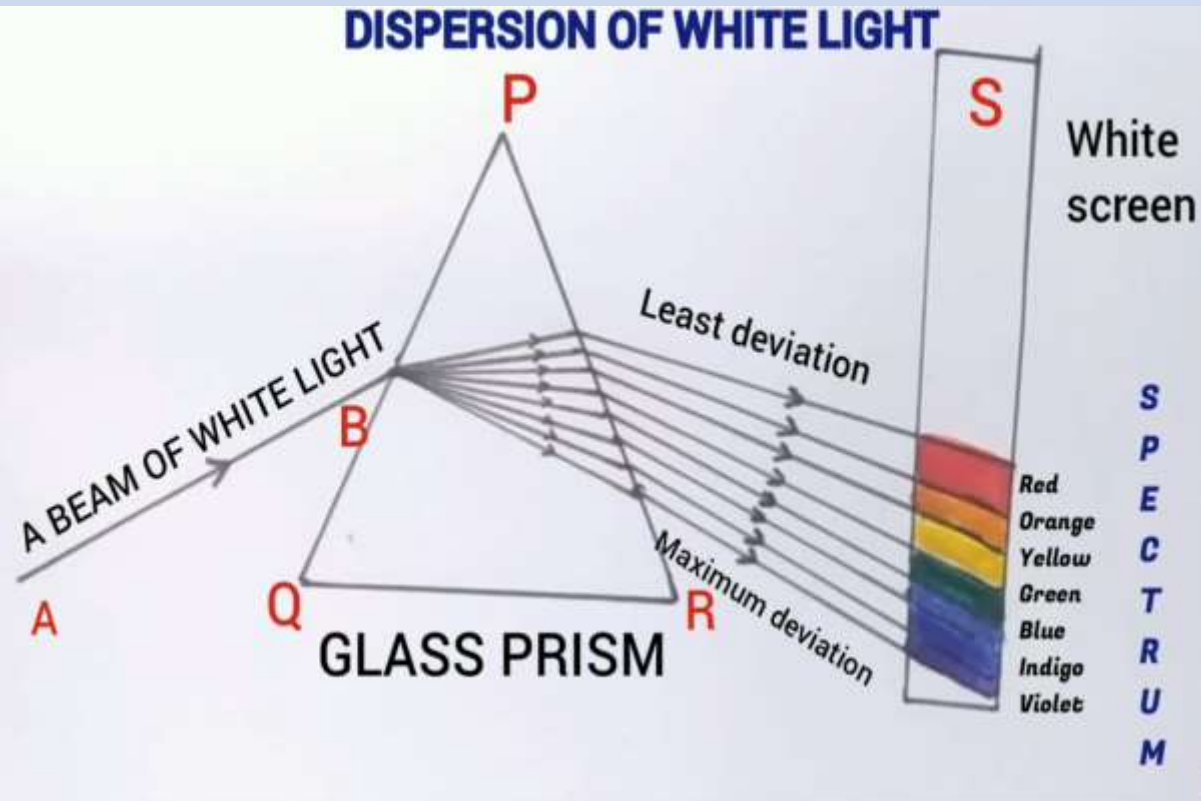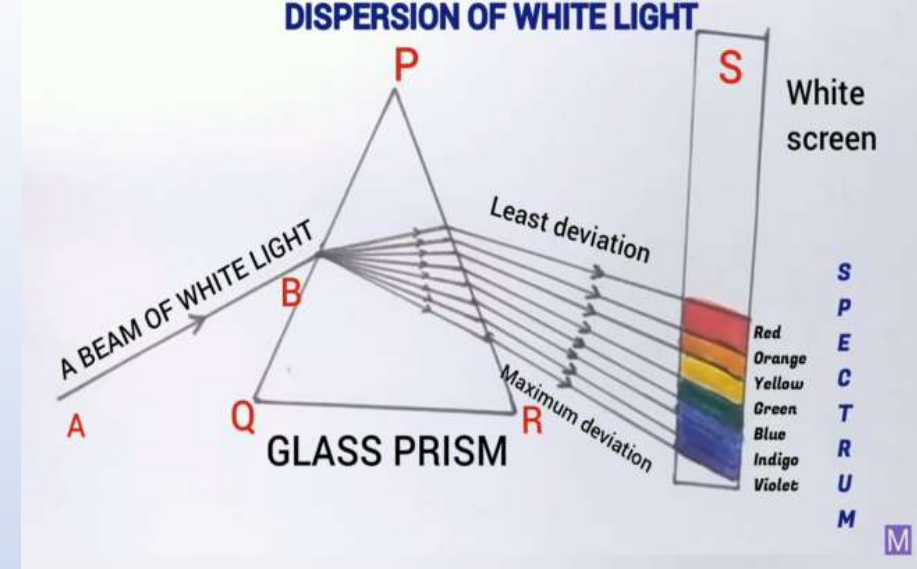# DISPERSION OF LIGHT
THROUGH PRISM

Learning Objective:

Students will be able to:

1.Demonstrate what dispersion of light is

2.Identify the colors of the spectrum (ROYGBIV)

3.Analyse why white light splits in a prism

4.Apply dispersion to real-life contexts (rainbow, prisms)

- **Keywords:**
- **Dispersion**
- **Spectrum**
- **White light**
- **Refraction**
- **Normal**

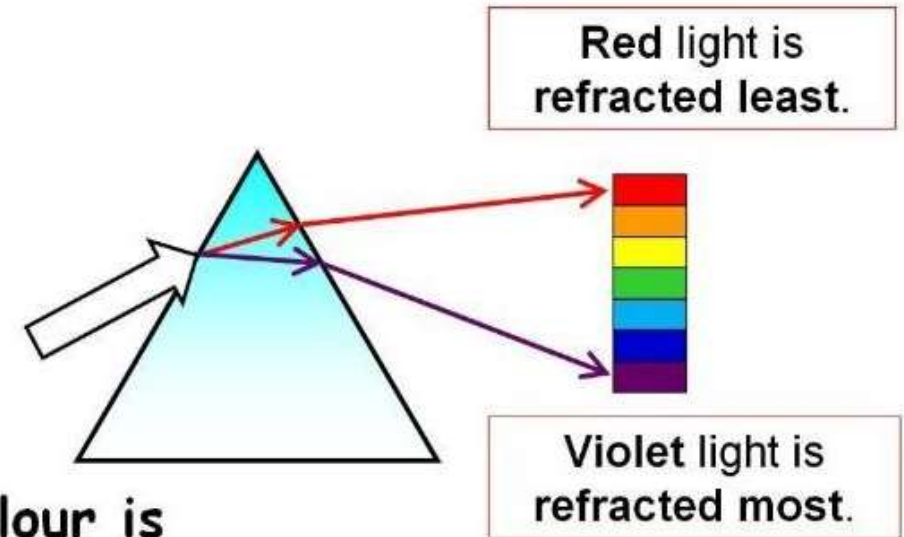# Starter: *Why do we see different colors in a rainbow?*

HPL
•**ACP:** Curiosity, Linking
•**VAA:** Open-mindedness, Engagement

Explaining dispersion.

White light disperses because the colours of the spectrum **refract to different extents.**

Red light is refracted least.

Violet light is refracted most.

Which colour is refracted the most?

Dispersion

Key Points:

•**Dispersion** = splitting of white light into colors

•Occurs because:
  - Different colors have different wavelengths
  - They refract (bend) by different amounts

•Order of colors:

Red, Orange, Yellow, Green, Blue, Indigo, Violet (ROYGBIV)

Real-Life Examples
•Rainbow
•Glass prisms

HPL
•**ACP:** Analyzing, Linking
•**VAA:** Respect for evidence, Confidence

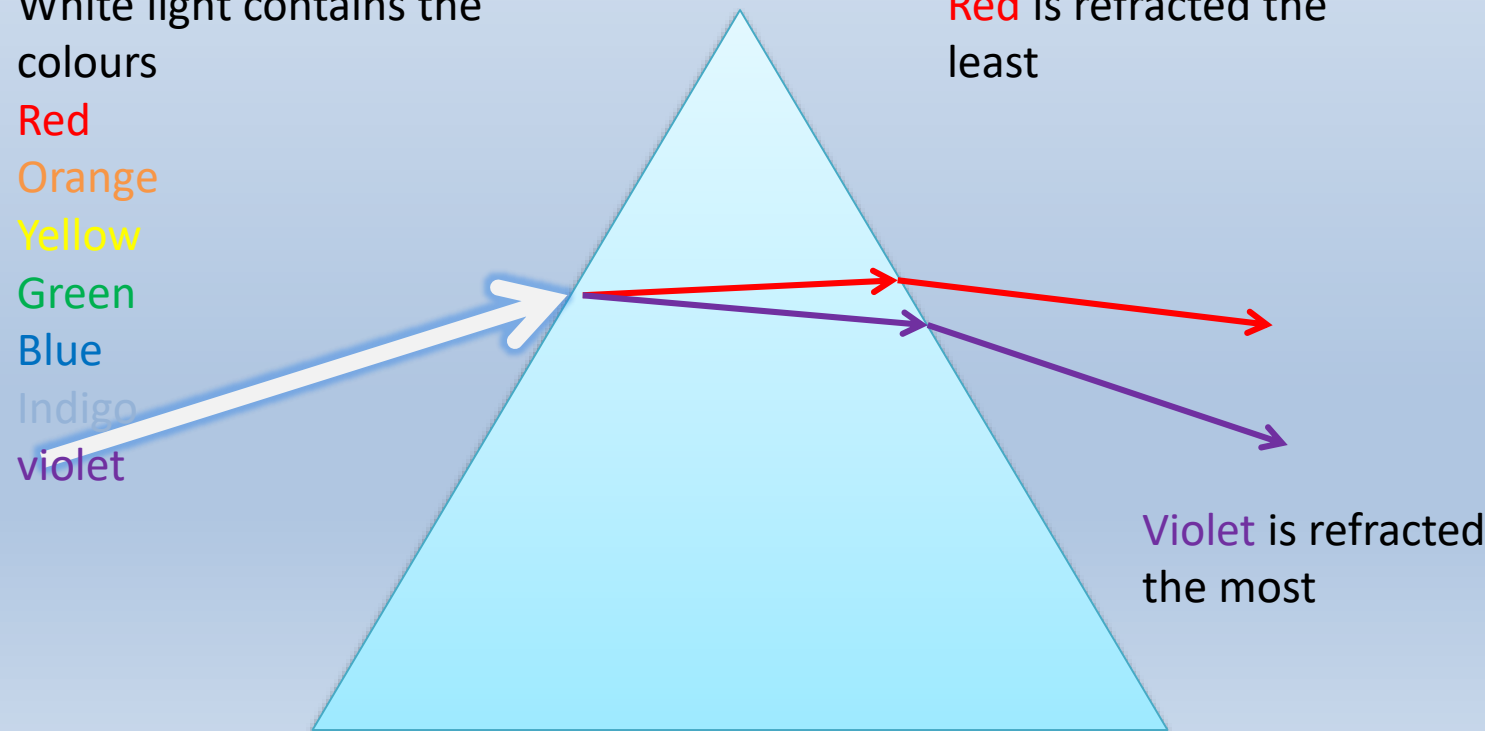https://youtu.be/VEG895IopSo?feature=shared – till 3:40

https://youtu.be/gFvcBP3TKCk?feature=shared – 1:17

White light contains the colours
Red
Orange
Yellow
Green
Blue
Indigo
violet

Red is refracted the least

Violet is refracted the most

LEVEL – 1 Identify & Recall

Task:
•Label a prism diagram
•Match colours to correct order

Questions:
1.What is dispersion?

2.Write the colours of the spectrum in order

3.Circle where white light enters the prism

HPL

•**ACP:** Meta-thinking (recall)

•**VAA:** Confidence, Perseverance

Dispersion

LEVEL - 2 – Explain & Apply

Task:

•Explain how a prism causes dispersion

•Answer structured questions

Questions:

1.Why does white light split in a prism?

2.Which color bends the most?

3.Where do we see dispersion in nature?

IP (Inclusive Practice)

•Pair discussion

•Sentence starters

HPL:

•**ACP:** Analyzing, Linking

•**VAA:** Curiosity, Responsibility

Dispersion

LEVEL - 3 — Analyze & Extend

Task:

- Draw and explain dispersion in a prism

- Use scientific vocabulary

Challenge Question:

Why does violet light bend more than red light in a prism?

RTI (Response to Intervention)

- Extension challenge

- Higher-order questioning

HPL

- **ACP:** Reasoning, Critical thinking, Creating

- **VAA:** Open-mindedness, Risk-taking

UAE IDENTITY & AEP CONNECTION

Why Rainbows visible after rain in the UAE?

- **HPL**

- **ACP:** Linking to real-world contexts

- **VAA:** Citizenship, Responsibility

UAE IDENTITY & AEP CONNECTION

Why Rainbows visible after rain in the UAE?

1. Strong Sunlight

•After rain, the **sun often comes out brightly** in the UAE.

•Strong sunlight is needed to produce clear rainbows.

2Water Droplets in the Air

•After rainfall, **tiny water droplets** remain suspended in the air.

•Each droplet acts like a **small prism**.

Dispersion of Light

Inside each water droplet:

1.Sunlight **enters the droplet** and slows down.

2.Light **refracts and splits** into different colours.

3.Light **reflects inside** the droplet.

4.Light **refracts again** as it exits.

This process separates white light into **ROYGBIV** colours.

•Rainbows appear after rain in the UAE because **sunlight shines through water droplets**, causing **refraction, reflection, and dispersion** of light.

•**HPL**

•**ACP:** Linking to real-world contexts

•**VAA:** Citizenship, Responsibility

PLENARY – Reflect & Assess

Exit Ticket

1.One thing I learned about dispersion
2.One real-life example of dispersion
3.One question I still have

Quick Quiz

1.What is dispersion?

2.Name two colours in the spectrum

3.What causes white light to split?

HPL
•**ACP:** Meta-thinking
•**VAA:** Independence, Confidence

Success Criteria

1. I can demonstrate what dispersion of light is

2. I can identify the colors of the spectrum (ROYGBIV)

3. I can analyse why white light splits in a prism

4. I can apply dispersion to real-life contexts (rainbow, prisms)