TEACHER'S GUIDE

Listening activities and suggested answers

What happens near a black hole?

This version: English | Duration: 10:04 (about 10 min)

Published languages: English, Finnish.

YouTube: youtu.be/As4FjSekNmA
Spotify: open.spotify.com/episode/7oIpF0tGo6BV9EJDZsldpD

Introduce the questions before listening. Students write answers after the whole episode. Discuss their answers as a class or in pairs.

Suggested answers are in italics. Accept students' own wording when the meaning is correct.

1 What is an event horizon?

It is the boundary beyond which nothing can escape back out, not even light. It is not a solid wall.

2 Why can light be visible around a black hole?

It comes from hot material outside the event horizon. The black hole itself is not a burning orange ball.

3 How can tidal forces stretch an object?

Gravity can pull more strongly on the nearer end than the farther end. That difference stretches the object.

4 Plan a probe's observation trip

The route stays outside the event horizon. Observations may concern moving stars, hot gas or bent light. The drawing is an explanatory model, not an exact photograph.

Teaching tip: Ask why the probe must not leave its messages trapped inside the boundary.