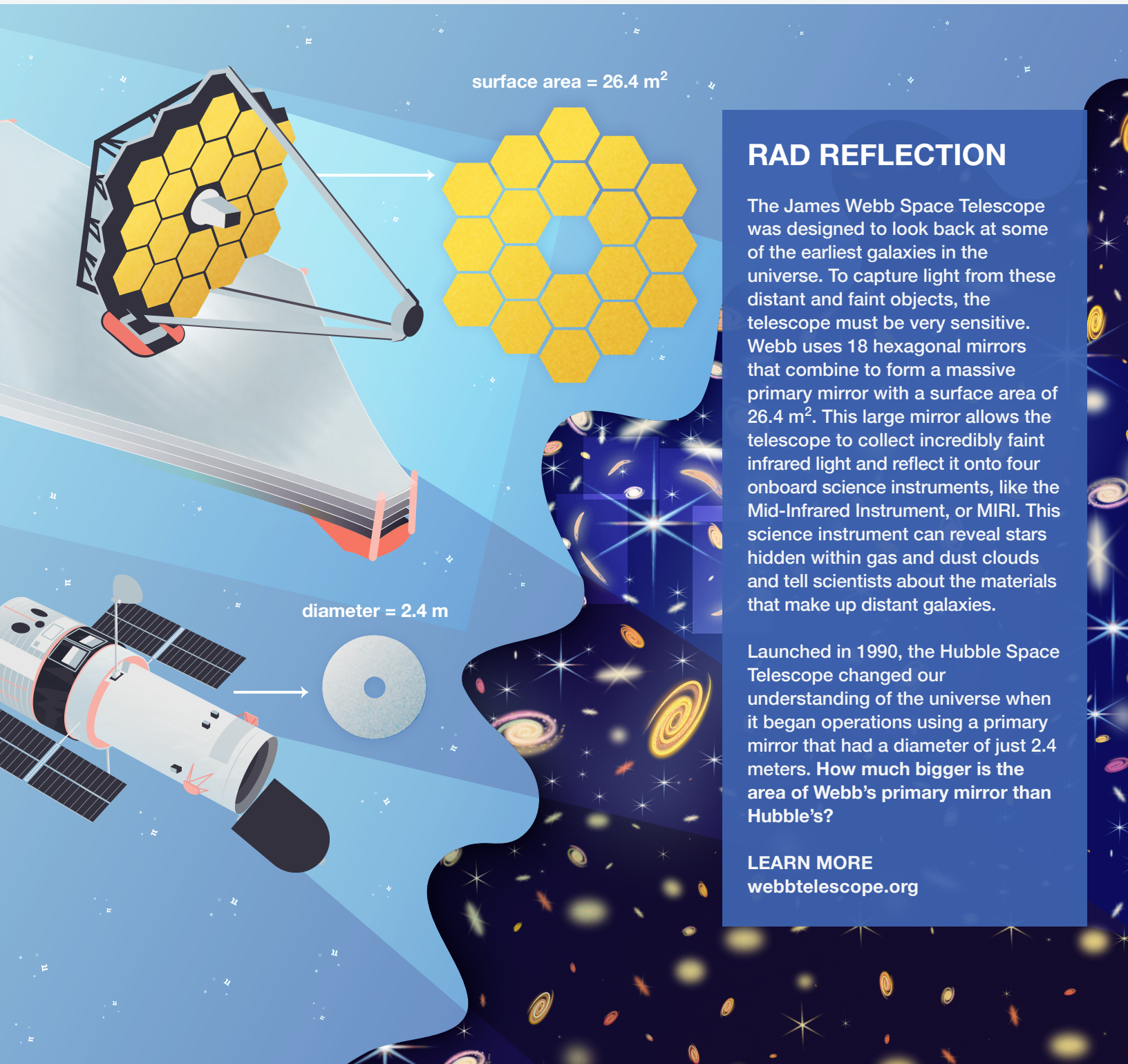




π IN THE SKY¹⁰

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RAD REFLECTION

The James Webb Space Telescope was designed to look back at some of the earliest galaxies in the universe. To capture light from these distant and faint objects, the telescope must be very sensitive. Webb uses 18 hexagonal mirrors that combine to form a massive primary mirror with a surface area of 26.4 m^2 . This large mirror allows the telescope to collect incredibly faint infrared light and reflect it onto four onboard science instruments, like the Mid-Infrared Instrument, or MIRI. This science instrument can reveal stars hidden within gas and dust clouds and tell scientists about the materials that make up distant galaxies.

Launched in 1990, the Hubble Space Telescope changed our understanding of the universe when it began operations using a primary mirror that had a diameter of just 2.4 meters. How much bigger is the area of Webb's primary mirror than Hubble's?

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surface area = 26.4 m^2

diameter = 2.4 m