

A vibrant space-themed illustration. At the top left, a stylized orange and red rocket with a blue window is flying towards the right. The background is a dark blue space filled with various celestial bodies: a large red ring-shaped planet, a bright yellow sun-like planet, and several smaller red and orange planets. Swirling blue and red nebulae are scattered throughout. Numerous yellow and white stars of different sizes are scattered across the scene. The title 'BLACK HOLE WORMHOLE' is written in large, bold, light blue capital letters across the center.

# BLACK HOLE WORMHOLE

This is a quest to find **Planet X**, a world where humanity can set up camp and build a second home among the stars. Not to abandon Earth, but to create another refuge in the unexplored vastness of space. Suit up and launch into the cosmos, traversing black holes and wormholes in search of what could be our future home. On this cosmic quest, reaching Planet X will help you save precious light from vanishing into the endless dark.

## How to play

**Black Hole Wormhole** is a multiplayer dice game that can be played by a minimum of two players (plus a moderator). The goal of the game is to reach the exoplanet, Planet X, first. You will encounter black holes on your space journey that can slow your progress, and wormholes, which exist only in our imagination until now, that can speed up your journey to the exoplanet. Whoever reaches the exoplanet first wins!

### Starting the game:

- The players will select their AI companion cube (game pieces).
- A non-player moderator must be assigned to ask the questions that the players will face during the game. In the absence of a moderator, the players can ask each other questions.
- The game will begin from Circle 1 - the launch site - and the players will continue moving ahead toward the final circle in the center, Planet X, by rolling the dice.
- The players will take successive turns to roll the dice and move forward.
- The players will get successive turns to roll the dice to move ahead.
- The players must roll a 1 on their dice to launch themselves into outer space.

### Game play:

After launching, the player will roll the dice. The number shown on the dice will determine how many steps the player moves.

For example, if you are on Circle 1 and roll a 4, you will move to Circle 5.

Any player who lands on a **black hole circle** will be in the proximity of a black hole. But fear not, if they can answer a question\* correctly, they can continue their space journey unobstructed.

Any player who lands on a **wormhole circle** will get to jump to the next wormhole circle. For example, if you land on Circle 11, you will jump to Circle 28 — the next wormhole.

*\*The moderator will ask a question in the next turn of the player. To make it easy for the moderator, a questions card is provided. The question can be selected by looking at the circle number and the number on the dice.*

*For example, if you encounter a blackhole on circle 7 and the number on your dice is 2 then select the question for circle 7, number 2. If you answer correctly then you will move number-on-the-dice steps ahead, in this case 2, otherwise you will stay on circle 7 until your next turn. So, if you fail to answer the question, you will skip a turn and will resume playing normally from your next turn.*

You can visit [www.vigyanvyanjan.com](http://www.vigyanvyanjan.com) for a new set of questions once you have grown beyond this set!

## Questions for maneuvering away from the blackholes

Circle	Number on Dice	Question	Correct Answer
7	1	What is the study of space and celestial objects called?	Astronomy
	2	What is the force that keeps planets in orbit around the Sun?	Gravity
	3	What region between Mars and Jupiter contains many rocky bodies?	Asteroid belt
	4	What giant storm on Jupiter is called?	Great Red Spot
	5	What is the time taken by the Moon to orbit Earth?	27.5 days
	6	What lies beyond Neptune?	Kuiper Belt
18	1	What distant spherical cloud surrounds the solar system?	Oort Cloud
	2	What powers the Sun's energy?	Fusion
	3	What element is formed from hydrogen fusion?	Helium
	4	What is the fastest speed in physics?	Light
	5	What is the speed of light approx?	$3 \times 10^8$ m/s
	6	What bends spacetime?	Mass
30	1	What is a planet orbiting a star other than the Sun called?	Exoplanet
	2	What zone around a star allows liquid water?	Habitable zone
	3	What type of galaxy is the Milky Way?	Spiral
	4	What stage will the Sun become in future?	Red giant
	5	What is the final stage of Sun-like stars?	White dwarf
	6	What is an extremely dense stellar remnant called?	Neutron star
44	1	What do pulsars emit regularly?	Radio waves
	2	What is a rotating neutron star called?	Pulsar
	3	What is a binary star system?	Two-star system
	4	What do stars form from collapsing gas?	Nebula
	5	What do galaxies form together?	Clusters
	6	What is a group of galaxies called?	Galaxy Cluster
53	1	What is the matter we can see called?	Baryonic
	2	What method detects planets by dimming of starlight?	Transit
	3	What method detects planets by bending light?	Microlensing
	4	What method measures star distance using angle change?	Parallax
	5	What shift in light shows galaxies moving away?	Redshift
	6	What is the explosion of a massive star called?	Supernova

Circle	Number On Dice	Question	Correct Answer
62	1	What is the unit used to measure distances between stars?	Light-year
	2	Which scientist proposed the General and Special Theory of Relativity?	Albert Einstein
	3	What bends light in gravity fields?	Gravity
	4	What is the temperature measure of particle motion?	Energy
	5	What unseen matter affects galaxy rotation?	Dark matter
	6	What energy drives cosmic expansion?	Dark energy
85	1	What is the leftover radiation from the Big Bang?	Cosmic Microwave Background radiation
	2	What describes the expanding universe rate?	Hubble constant
	3	What is the universe doing over time?	Expanding
	4	What started the universe?	Big Bang
	5	What is the boundary of a black hole from which nothing escapes?	Event horizon
	6	What is the central point of infinite density in a black hole called?	Singularity
93	1	What is the disk of matter around a black hole called?	Accretion disk
	2	What process grows black holes?	Accretion
	3	What are early universe black holes called?	Primordial
	4	What radiation is predicted from black holes?	Hawking radiation
	5	What is a supermassive black hole location?	Galaxy center
	6	What is a shortcut through spacetime called?	Wormhole