Notes for teachers:

This game uses a real Monopoly board and money but involves knowledge of the subject to purchase real estate (not money!) or avoid fees

You will need:

The property knowledge cards printed (double-sided) printed and cut into individual cards

You will need:

Two six-sided dice

Money cut into individual bills

The Moon and Earth cards

The energy and property cards

"Fish" tokens for hotels

Property-acquisition question cards

Fee-avoidance question cards

A card holder is handy

**Space-opoly Game**

For this exercise, we will be playing Monopoly – but with a difference!

It’s about the Earth’s water supply and oceans

You roll the dice and go around the board

If you land on a property not owned by anyone else, you can try to “buy” it

In order to “buy” a property, you must answer a trivia question ***instead of*** paying money!

The Question-Asker will select a trivia card from the pool and read the question

If you get the answer right, you get the property (no money!) AND the trivia card

If you don’t know the right answer YOU CAN”T BUY THE PROPERTY!

Property owners may stock fish on their property at any time – you don’t need to own

the entire set

Fish cost $50 each, and each fish on a property increases the fishing fee charged

If you land on a property already owned by another player, they are owed a fishing fee

If there are no fish on the property, the fishing fee is $10

Each fish on a property increases the fee: 1 fish $20, 2 fish $30…

To avoid paying the fishing fee, you can answer a trivia question

If you can answer the question, you get the trivia card AND the bank pays the fishing fee of

If you cannot answer the question, you pay the fishing fee

If you land on a Earth or Moon space, the appropriate Card Keeper will select a

card and read the information

At the end of the game, the person with the most money wins

Convert property/trivia cards/fish to money by multiplying how many you have of each by 100

Positions needed:

Banker

Loan shark (IOUs)

Moon card keeper

Earth card keeper

Property manager

Fish (hotels) keeper

Question-Asker

**My position was the:** **\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**The amount of money I had at the end of the game was: \_\_\_\_\_\_\_\_\_\_\_\_**

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| ***Lift Off!*** |
| ***Tiros 1*** |
| **Cost $50 Rent $10** |
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| **Earth** |
| ***X-15*** |
| **Cost $60 Rent $10** |
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| ***Payload Tax***  ***Roll dice***  ***Pay $10 x number*** |
| ***Redstone Rocket*** |
| **Cost $100 Rent $30** |
| ***Freedom 7*** |
| **Cost $100 Rent $10** |
|  |
| **Moon** |
| ***Liberty Bell 7*** |
| **Cost $100 Rent $10** |
| ***Faith 7*** |
| **Cost $110 Rent $10** |
| **Kuiper Belt** |
| **Just visiting…** |
| ***JFK Space Center*** |
| **Cost $150 Rent $20** |
| ***Electricity in Space*** |
| **Cost $150 Rent $20** |
| ***LBJ Space Center*** |
| **Cost $150 Rent $20** |
| ***Goddard Space Flight Center*** |
| **Cost $160 Rent $20** |
| ***Titan Rocket*** |
| **Cost $250 Rent $30**  **Cost $110** |
| ***Gemini 3*** |
| **Cost $200 Rent $20** |
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| **Earth** |
| ***Gemini IV*** |
| **Cost $200 Rent $20** |
| ***Gemini VIII*** |
| **Cost $210 Rent $20** |
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| ***Free Fall*** |
| ***Apollo 8*** |
| **Cost $250 Rent $30** |
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| **Moon** |
| ***Apollo 13*** |
| **Cost $250 Rent $30** |
| ***Apollo 15*** |
| **Cost $260 Rent $30** |
| ***Saturn V Rocket*** |
| **Cost $250 Rent $30** |
| ***Viking 1*** |
| **Cost $300 Rent $30** |
| ***Voyager 1*** |
| **Cost $300 Rent $30** |
| ***Space Toilets*** |
| **Cost $150 Rent $20** |
| ***New Horizons*** |
| **Cost $310 Rent $30** |
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| ***Go to the Kuiper Belt!*** |
| ***StS 1*** |
| **Cost $350 Rent $40** |
| ***StS 7*** |
| **Cost $350 Rent $40** |
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| **Earth** |
| ***StS 31*** |
| **Cost $360 Rent $40** |
| ***Shuttle*** |
| **Cost $250 Rent $30** |
| ***Friendship 7*** |
| **Cost $400 Rent $40** |
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| **Moon** |
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| ***Docking tax***  ***Roll dice***  ***Pay $20 x number*** |
| ***Apollo 11*** |
| **Cost $450 Rent $40** |

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|  | Property Acquisition Card  Redstone Rocket |  |  | Property Acquisition Card  Titan Rocket |  |  | Property Acquisition Card  Saturn V Rocket |  |
|  | Property Acquisition Card  Shuttle |  |  | Property Acquisition Card  Electricity in Space |  |  | Property Acquisition Card  Space Toilets |  |
|  | Property Acquisition Card  Tiros 1 |  |  | Property Acquisition Card  X-15 |  |  | Property Acquisition Card  Freedom 7 |  |
|  | Property Acquisition Card  Liberty Bell 7 |  |  | Property Acquisition Card  Faith  7 |  |  | Property Acquisition Card  JFK  Space Center |  |
|  | The Saturn V rocket is noted because:  **a) it is the only launch vehicle to carry humans beyond low Earth orbit**  b) astronauts died during a failed launch  c) it is reusable  d) it is made in Germany |  |  | The Titan rockets were used for:  a) all of the Mercury launches  **b) all of the Gemini launches**  c) all of the Apollo launches  d) all of the Int'l Space Station launches |  |  | The Redstone rocket was a direct descendant of:  a) Robert Goddard's rockets  b) the Atlas rocket  c) the Jupiter rocket  **d) the German V-2 rocket** |
|  | What does the bathroom look like on the space station?  **a) there are no sinks or showers**  b) a door separates the room from the rest of the station  c) the toilet is 12 inches square  d) there is a "men's" and "women's" toilet |  |  | How does electricity act in the vacuum of space?  a) space generates its own electricity  b) It cannot flow  c) exactly like it acts on Earth  **d) at higher voltages it forms a visible arc** |  |  | What is the name of the space shuttle destroyed in midair 28 Jan 1986?  a) Atlantis  b) Endeavour  **c) Challenger**  d) Columbia |
|  | Freedom 7, was the first United States human spaceflight, on May 5, 1961. Who was the pilot?  a) John Glenn  b) Neil Armstrong  **c) Alan Shepard**  d) Buzz Aldrin |  |  | The X-15 was a hypersonic rocket-powered aircraft. Its pilots qualify as astronauts because:  **a) they exceeded an altitude of 50 miles**  b) they exceeded a speed of 4000 mph  c) the X-15 was powered by a rocket  d) they orbited Earth |  |  | TIROS -1 (1960) was the first successful low-Earth orbital satellite. It was used to:  a) spy on the Soviet Union  **b) monitor weather**  c) broadcast television  d) link phone systems |
|  |  |  |  | Faith 7(1963) was the final Mercury crewed space mission. It is known because:  **a) Gordon Cooper was the last American launched for a solo mission**  b) the capsule is in the British Museum  c) the mission had to be aborted  d) the Soviets shadowed the flight |  |  | Liberty Bell 7 (1961) was the second United States human spaceflight. It is remembered because:  a) it was the first orbital  b) Gus Grissom  reported space flies  **c) the hatch blew after splashdown and the capsule sank**  d) liftoff was delayed 2 weeks by hurricanes |
|  | Property Acquisition Card  LBJ  Space Center |  |  | Property Acquisition Card  Goddard  Space Flight  Center |  |  | Property Acquisition Card  Gemini  3 |  |
|  | Property Acquisition Card  Gemini  *IV* |  |  | Property Acquisition Card  Gemini  *VIII* |  |  | Property Acquisition Card  Apollo  8 |  |
|  | Property Acquisition Card  Apollo  13 |  |  | Property Acquisition Card  Apollo  15 |  |  | Property Acquisition Card  Viking  1 |  |
|  | Property Acquisition Card  Voyager  1 |  |  | Property Acquisition Card  New  Horizons |  |  | Property Acquisition Card  StS  1 |  |
|  | Who was the first American to walk in Space?  A) John Glenn  **B) Edward White**  C) Alexy Leonov  D) Sally Ride |  |  |  |  |  |  |
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|  | Property Acquisition Card  StS  7 |  |  | Property Acquisition Card  StS  31 |  |  | Property Acquisition Card  Friendship  7 |  |
|  | Property Acquisition Card  Apollo  11 |  |  |  |  |  |  |  |
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|  | What are Saturn's rings made of?  A) Sulfuric acid  B) Dust  **C) Ice**  D) Hydrogen |  |  | What is a solar flare?  **A) an explosion on**  **the Sun**  B) high energy  charged particles  originating in outer  space  C) charged particles  trapped by Earth's  magnetic field  D) a space tornado |  |  | Neil Armstrong and Buzz Aldrin walked on the moon. Who was the astronaut who stayed aboard the command module, Columbia?  **a) Michael Collins**  b) John Glenn  c) Gus Grissom  d) Sally Ride |
|  | What is a constellation?  A) Another solar  system  B) A binary star  system  C) Another galaxy  **D) A group of stars**  **that, when seen**  **from Earth, form**  **a pattern** |  |  | What is a black hole?  A) A star with a high  carbon content  **B) A region from**  **which not even**  **light can escape**  C) The space  between planets D) The space  between galaxies |  |  | In what year did the first people walk on the moon?  A) 1967  B) 1968  **C) 1969**  D) 1970 |
|  | How old is the universe?  A) About 15,000  years old  B) About 15 million  years old  **C) About 15**  **billion years old**  D) About 15 trillion  years old |  |  | Who was the first American woman astronaut to perform a spacewalk?  A) Sally Ride  B) Christa  McAuliffe  **C) Kathy Sullivan**  D) Sunita Williams |  |  | What was the first space station called?    A) Tiangong 1  **B) Salyut 1**  C) International  Space Station  (ISS)  D) Mir |
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|  | Who was the first American to orbit the Earth?  **a) John Glenn**  b) Edward White  c) Alexy Leonov  d) Sally Ride |  |  | What shape is the Milky Way?  a) barbell  b) blob  c) spherical  **d) spiral** |  |  | How long does it take the Earth to go around the Sun?  a) 1 day  **b) 1 year**  c) 1 month  d) 28 days |
|  | True or false: the Earth orbits the Sun  **(true)** |  |  | True or false: the sun is a star  **(true)** |  |  | Who was the first person to walk on the moon?  a) John Glenn  b) Gus Grissom  c) Alan Shepard  **d) Neil Armstrong** |
|  | Who was the first man in space?  a) John Glenn  **b) Yuri Gagarin**  c) Alan Shephard  d) Gherman Titov |  |  | What is the third planet from the Sun?  **a) Earth**  b) Venus  c) Mars  d) Jupiter |  |  | What is the most distant object visible to the naked eye?  a) Saturn  **b) Andromeda**  **galaxy**  c) The Sun  d) The Milky Way |
|  | What is the brightest star in the night sky at any time?  a) Alpha Centauri  b) North Star  **c) Sirius**  d) Venus |  |  | What is the true planet farthest from the Sun?  a) Uranus  b) Xena  **c) Neptune**  d) Pluto |  |  | What is the closest planet to the Sun?  **a) Mercury**  b) Venus  c) Mars  d) Jupiter |
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|  | What is the term for a natural satellite?  a) a satellitoid  b) a planetoid  **c) a moon**  d) a moon-like  object |  |  | What is the name of a building that contains telescopes?  a) telescopium  b) planetarium  c) watch tower  **d) observatory** |  |  | What object’s gravitational pull is so great that not even light can  escape from it?  a) wormhole  **b) black hole**  c) gravity well  d) dark matter |
|  | What is a small object made of ice, frozen gas, and dust that orbits the sun called?  a) an asteroid  **b) a comet**  c) a meteor  d) a meteroid |  |  | What is the name of NASA’s most famous space telescope?  a) Yerkes  b) Kitt Peak  c) Palomar  **d) Hubble** |  |  | Which planet has a surface and atmosphere most like the Earth?  a) Mercury  b) Venus  **c) Mars**  d) Jupiter |
|  | Earth’s tides are caused by gravitational pulls by:  a) the Earth  b) the Sun  c) the Moon  **d) the Moon and**  **Sun** |  |  | Which is the brightest known comet in the solar system?  a) Tempel  b) Hyakutake  **c) Halley’s Comet**  d) Lovejoy |  |  | What is the name of the first satellite sent into space?  a) Vela  b) Vostok  c) Echo  **d) Sputnik** |
|  | **Which planet is the densest?**  **a) Earth**  b) Venus  c) Mars  d) Mercury |  |  | The first weather satellite launched was  **a) Vanguard**  b) Tiros  c) Nimbus  d) Echo |  |  | Who was the first woman in space?  **a) Valentina**  **Tereshkova**  b) Sally Ride  c) Svetlana  Savitskaya  d) Ellen Ochoa |
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|  | What was the first creature that went into space?  **a) fruit flies**  b) a dog - Laika  c) a mouse – Laska  d) a monkey –  Albert |  |  | Which planet is referred to as the “planet of oceans”?  a) Mars  b) Venus  c) Neptune  **d) Earth** |  |  | What is the Latin name for the Sun?  a) Ceres  **b) Sol**  c) Solara  d) Suna |
|  | Meteoroids that hurtle into the atmosphere as streaks of light are called?    a) Asteroids  **b) Meteors**  c) Meterorites  d) Streakers |  |  | How many stars are there in in the big dipper?  A. Six stars  **B. Seven stars**  C. Eight stars  D. Nine stars |  |  | Which planet is named after the Roman god of love?  A) Mercury  **B) Venus**  C) Earth  D) Mars |
|  | Which planet is named after the Roman god of war?    A) Mercury  B) Venus  C) Earth  **D) Mars** |  |  | Which planet is named after the Roman god of the sea?    A) Jupiter  B) Saturn  C) Uranus  **D) Neptune** |  |  | Which planet is named after the Roman king of the gods?    A) **Jupiter**  B) Saturn  C) Uranus  D) Neptune |
|  | Which planet is named after the Roman god of speed?  **A) Mercury**  B) Venus  C) Earth  D) Mars |  |  | What would you find if you travelled to the center of the solar system?  A) A very large star  B) A cluster of stars  C) Nothing  **D) A black hole** |  |  | What force bends light rays travelling though the universe?  **A) Gravity**  B) Light is not bent  C) Other light rays  D) Inertia |
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|  | Who was the first African-American astronaut?  A) John Glenn  B) Gus Grissom  **C) Guy Bluford**  D) Bernard Harris |  |  | Who was the first teacher in space?  A) Sally Ride  **B) Christa**  **McAuliffe**  C) Kathy Sullivan  D) Sunita Williams |  |  | Where does the element gold come from?  A) The core of a  small star  **B) A stellar**  **explosion**  C) Space dust  D) The center of a  black hole |
|  | Who was the first African-American to perform a spacewalk?  A) John Glenn  B) Gus Grissom  C) Guy Bluford  **D) Bernard Harris** |  |  | How far is the nearest black hole?  A) About 1 light year  from Earth  B) About 2 light years  from Earth  **C) About 1,600 light**  **years from Earth**  D) The center of the  Milky way galaxy  25,000 light  years from Earth |  |  | How many flights did Columbia make in its lifetime?  A) 8  B) 18  **C) 28**  D) 38 |
|  | How many of the original Mercury 7 astronauts walked on the moon?  A) None  **B) 1**  C) 2  D) All 7  (Only one, Alan Shepard, walked on the moon) |  |  | What is the big red spot on Jupiter?  **A) A hurricane-**  **like storm**  **system**  B) A gas cloud  C) Possible life  forms  D) Hydrochloric  acid |  |  | Which astronaut was the only one of the Mercury 7 astronauts to fly in all three of NASA's programs (Mercury, Gemini and Apollo)?  A) John Glenn  **B) Wally Schirra**  C) Gus Grissom  D) Sally Ride |
|  | What was the third U.S. space project?  A) Mercury  B) Gemini  **C) Apollo**  D) Sputnik |  |  | What is Jupiter made of?  A) Mostly methane  **B) Mostly**  **hydrogen**  C) Mostly  hydrochloric  acid  D) Mostly rock |  |  | How long does it take for the Sun's light to reach the Earth?  A) No time – it is  immediate  B) 1 minute  **C) 8 minutes**  D) 1 hour |
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|  | The International Space Station was built by the US, Russia, Europe, Japan, and…?  A) France  **B) Canada**  C) China  D) Brazil |  |  | What is a supernova?  **A) a stellar explosion**  B) material falling into  super massive black  holes  C) the collapsed core  of a massive star  D) a rapidly rotating  object that emits  regular pulses |  |  | What was the second U.S. space project?  A) Mercury  **B) Gemini**  C) Apollo  D) Sputnik |
|  | How far away is space?  **A) 62 miles**  B) 620 miles  C) 6200 miles  D) 62,000 miles |  |  | What was the first U.S. space project?  **A) Mercury**  B) Gemini  C) Apollo  D) Sputnik |  |  | How many men have walked on the moon?  A) 4  B) 8  **C) 12**  D) 20  Neil Armstrong, Buzz Aldrin, Pete Conrad, Alan Bean, Alan Shepard, Edgar Mitchell, David Scott, James Irwin, John Young, Charles Duke, Eugene Cernan, Harrison Schmitt |
|  | How many U.S. Space Shuttles were built?  A) 4  B) 5  **C) 6**  D) 7  Atlantis, Columbia, Challenger, Discovery, Endeavor, Enterprise |  |  | Who in 1965 became the first person to walk in Space?  A) John Glenn  B) Edward White  **C) Alexy Leonov**  D) Sally Ride |  |  | What is the largest interplanetary spacecraft ever built?  A) Vela satellite  B) Voyager 1, in the  outer solar system  **C) Cassini, currently**  **on its way to**  **Saturn**  D) Solar Probe Plus |
|  | What type of creatures were Laska and Beny who went into space in 1958?  A) Dogs  B) Apes  **C) Mice**  D) Spiders |  |  | Which is the nearest star to the Earth, after the sun?  A) Alpha Centauri  B) Beta Centauri  **C) Proxima**  **Centauri**  D) Gamma  Centauri |  |  | In 1986 which body within the solar system was explored by the European Giotto space probe?  A) The Moon  B) Mars  C) The Sun  **D) Halley's Comet** |
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|  | Which theory states that the Universe was created after an explosion?  A) Detonation Theory  B) Explosion Theory  C) Implosion Theory  **D) Big Bang Theory** |  |  | Which element makes up over 90% of the atoms in our galaxy?  A) Oxygen  **B) Hydrogen**  C) Iron  D) Nitrogen |  |  | Which is the largest asteroid in the solar system?  **A) Ceres**  B) Magna  C) Humonga  D) Massivo |
|  | Which planet was once thought to be covered by a network of canals?  A) Earth  **B) Mars**  C) Jupiter  D) Saturn |  |  | What is the constellation named after a hunter?  A) Aquarius  **B) Orion**  C) Taurus  D) Pegasus |  |  | Where is Earth in the Milky Way galaxy?  A) The center  B) The edge of the rim  C) Closer to the center  than the rim  **D) Almost exactly in**  **the middle**  **between the**  **center and the rim** |
|  | What is the smallest planet in the Solar System?  **A) Mercury**  B) Venus  C) Mars  D) Pluto |  |  | What was the name of Yuri Gagarin's space capsule?  A) Mercury 1  B) Gemini 2  C) Apollo 3  **D) Vostock 1** |  |  | Which planet has a year which is shorter than its day?  A) Mercury  **B) Venus**  C) Mars  D) Jupiter |
|  | What is the only space program named after two living things?  A) Mercury  **B) Gemini**  C) Apollo  D) The Shuttle  program |  |  | What kind of extraterrestrial object has been named after the 17th-century astronomer Edmond Halley?  A) A moon of Jupiter  **B) A comet**  C) An asteroid  D) A star |  |  | Where, theoretically, might one find objects squeezed to an infinite density?  A) Inside a star  B) Inside a  supernova  C) Inside a quasar  **D) Inside a black**  **hole** |

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| ***Tiros 1*** | ***X-15*** | ***Redstone Rocket*** |
| **Cost $50** | **Cost $60** | **Cost $250** |
| ***Titan Rocket*** | ***Saturn V Rocket*** | ***Shuttle*** |
| **Cost $250** | **Cost $250** | **Cost $250** |
| ***Freedom 7*** | ***Liberty Bell 7*** | ***Faith 7*** |
| **Cost $100** | **Cost $100** | **Cost $110** |

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| ***JFK Space Center*** | ***LBJ Space Center*** | ***Goddard Space Center*** |
| **Cost $150** | **Cost $150** | **Cost $160** |
| ***Space Toilets*** | ***Electricity in Space*** |  |
| **Cost $150** | **Cost $150** |  |
| ***Gemini 3*** | ***Gemini IV*** | ***Gemini VIII*** |
| **Cost $200** | **Cost $200** | **Cost $210** |

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| ***Apollo 8*** | ***Apollo 13*** | ***Apollo 15*** |
| **Cost $250** | **Cost $250** | **Cost $260** |
| ***Viking 1*** | ***Voyager 1*** | ***New Horizons*** |
| **Cost $300** | **Cost $300** | **Cost $310** |
| ***STS-1 Columbia*** | ***STS-7 Challenger*** | ***STS-31 Discovery*** |
| **Cost $350** | **Cost $350** | **Cost $360** |

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| ***Friendship 7*** | ***Apollo 11*** |  |
| **Cost $400** | **Cost $450** |  |

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| MOON  Move back three | MOON  Pay $200 |
| MOON  Advance any token to the space of your choice | MOON  Pay $50 for each property owned |
| MOON  Pay $50 for each motel owned | MOON  Go directly to jail |
| MOON  Go backwards to the nearest rocket | MOON  Pay $100 |
| MOON  Advance to Water Works | MOON  Advance to Voyager 2 and pay $50. If owned, pay rent, too! |
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| MOON  Pay $50 | MOON  Pay $10 |
| MOON  Have the player on your left move your token to any space | MOON  Pay $10 |
| MOON  Move forward 5 spaces | EARTH  Get out of Jail free…  (This card may be kept until needed or sold) |
| EARTH  Advance to Apollo 11 | EARTH  Collect $100 |
| EARTH  Collect prize of $50 | EARTH  Collect $10 from each player |
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| EARTH  Roll the dice and move again | EARTH  Collect $50 |
| EARTH  Collect $100 | EARTH  Move to Saturn V Rocket |
| EARTH  Collect $200 | EARTH  Collect $50 |
| EARTH  Advance all tokens to Goddard Space Flight Center | EARTH  Advance to Gemini 3 |
| EARTH  Collect $10 from any player | EARTH  Give $10 to any player |
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