



## Teacher's Notes: SpaceX

**General Tips:** The goal is to build background knowledge while leading an engaging discussion on any and all information that can be talked about on a given page. The items that you choose to bring up or focus on can be modified for the students you are working with. For example, if you have a student who can point to something in the picture, answer yes/no questions be sure to incorporate a lot more of that as you go through the book. On the same token, be sure to ask a lot of comprehension questions and critical thinking questions at the level appropriate for students working on those skills. There is something for everyone.

**Addressing problem solving:** Throughout the e-book, help students identify the problems that are involved and choice making opportunities throughout the article.

**Page 1:** NASA is an agency that is in charge of astronauts going into outer space. They are in charge of spaceships and everything that has to do with outer space. **Point:** NASA sign, rocket, moon, sky, **Questions:** What is NASA in charge of? What agency is in charge of space programs?

**Page 2:** The International Space Station (ISS) is a satellite that goes around Earth. It is up in space. Astronauts can live in the space station. The people who are on the space station do experiments to learn more about Earth and space **Point:** Earth, stars, ISS **Questions:** What is one of NASA's programs? What letters are short for International Space Station?

**Page 3:** The International Space Station (ISS) never lands on Earth. Orbit means circles around. The ISS circles around Earth all of the time. It has been doing this for 20 years. That is a long time! Astronauts are up inside the ISS when it is orbiting around Earth. **Point:** astronauts, Earth, ISS **Questions:** What does the ISS orbit around? Who lives up in the ISS? **Connect:** Get your finger and orbit and move it around the picture of Earth 16 times. That is how many times it orbits Earth every day. Do you think it would be fun to live on the ISS up in space?

**Page 4:** The ISS does not land on Earth. Whenever astronauts want to get to the ISS, they have to go on a spacecraft. A spacecraft is a special kind of airplane that goes into outer space. The spacecraft takes the astronauts to the International Space Station NASA needs a new spacecraft to take astronauts to the ISS. Russia has a spacecraft to take astronauts to the ISS. NASA has to pay Russia to take American astronauts because NASA didn't have one. That is why they hired SpaceX to make one. Now they won't have to ask Russia to take astronauts for them. Have the students view the following video of the Dragon making it to the ISS. <https://www.youtube.com/watch?v=QwDCWTqNceQ> **Point:** Earth, spacecraft, International Space Station, astronauts **Questions:** Who does NASA pay to take astronauts? Earth, spacecraft, ISS, astronauts **Connection:** Have you ever been on an airplane? Would you like to travel on a spacecraft to outer space?

**Page 5:** NASA paid a company to build them a spacecraft. The company is called SpaceX. SpaceX builds rockets and spacecraft. Elon Musk owns SpaceX. You may have seen Elon Musk on TV. He also makes the Tesla car. Is the spacecraft that they built to take the astronauts to the ISS is called Dragon? Who

owns SpaceX? **Point:** building, US flag, SpaceX sign, spacecraft **Questions:** What did NASA pay SpaceX to make? What did they name the spacecraft? **Connect:** Do you think Dragon is a good name for a spacecraft? What name would you have given it?

**Page 6:** Dragon has to be tested to make sure it works ok before they let people ride in it. The Dragon was all built and ready to go up in outer space for a test. On March 2, it launched into outer space to go to the ISS. Launch is a big word that means “take off.” The Dragon was launched at Kennedy Space Center. Kennedy Space Center is a place in Florida where a lot of rockets and spacecraft are launched. Have student view the following video of the Dragon launch.

<https://www.youtube.com/watch?v=WN5TmmNOtmE> **Point:** spacecraft, sky, smoke **Questions:** When was the Dragon launched? Where was it launched from? **Connect:** How do you think the people who build the Dragon felt when it launched into the sky? The Dragon was launched in Florida. Have you ever been to Florida?

**Page 7:** The Dragon made it to the ISS! Everyone was happy! **Point:** SpaceX owner – Elon Musk, Dragon, flag, **Questions:** What company does Elon Musk own? How did Elon Musk feel about the Dragon making it to the ISS? **Connect:** If you were Elon Musk, how would you feel? What things excite you?

**Page 8:** The Dragon left the ISS on March 8. The Dragon does not land like an airplane does. It needs parachutes to land back on Earth. The parachutes help to slow the Dragon down. Have the students view the following video showing how parachutes are used on spacecraft.

<https://www.youtube.com/watch?v=fAMqb77Dmzk> **Point:** Dragon, sky, parachutes **Questions:** When did the Dragon leave the ISS? Where did the Rocket come back to? What was used to help the Dragon land safely? How many parachutes were used? **Connect:** The Dragon landed using parachutes. Sometimes people jump out of planes with a parachute on. It is called sky diving. How do you think it would feel to jump out of an airplane with a parachute?

**Page 9:** The Dragon landed in the Atlantic Ocean. The Atlantic Ocean is near Florida. The Dragon can float. The Dragon did a perfect job. Now the people at NASA know that the Dragon is safe for astronauts to use. Have students view the following video of the Dragon landing.

<https://www.youtube.com/watch?v=zF7PF7tpGI> **Point:** ocean, map, United States, Dragon **Questions:** Where did the Dragon land? Did the Dragon do a good job? **Connect:** Have you ever seen the ocean? Have you ever swam in the ocean?