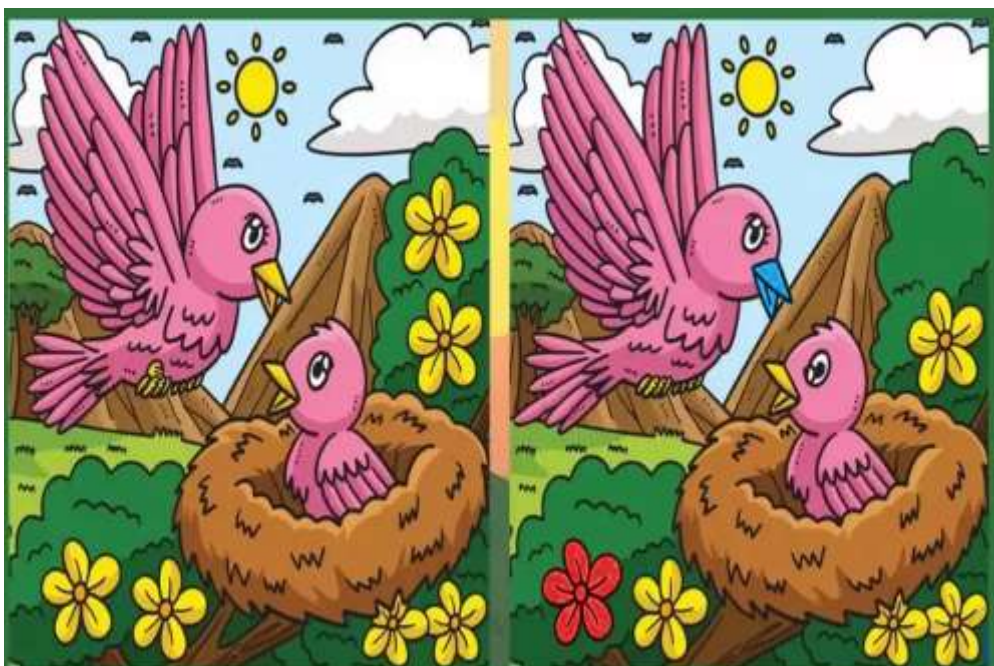


Yesterday was Respect for the Aged Day<sup>1</sup>. What did you do? Did you go and visit your grandparents? I don't have any grandparents anymore, but I respect my dad, who is 73 years old now. I gave him a call. I feel pretty aged as well recently. Haha. We are going to have more and more elderly people in Japan in the future. Maybe we need to have more public holidays for them. The Japanese government estimates<sup>2</sup> that 40% of the Japanese population will be over 65 by 2070 and less than 10% will be under 14. I think society is going to have to make a lot of changes in the coming years. Like I said last week, the Japanese government is investing<sup>3</sup> in care robots for the elderly.



10 differences

Last week's answer

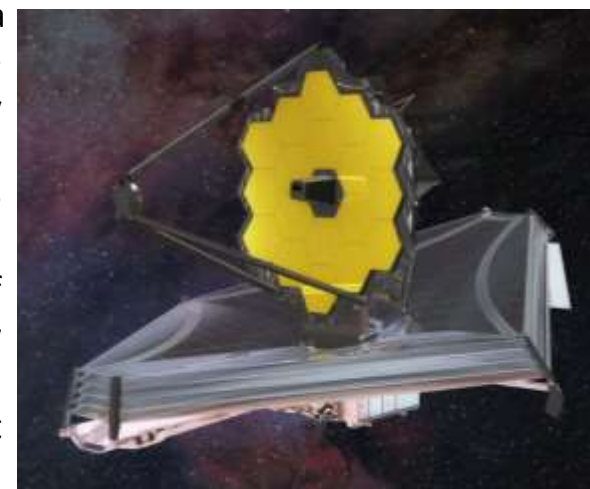


### Something you didn't know about exoplanets:

1. An exoplanet<sup>4</sup> is a planet that is outside of our solar system<sup>5</sup>.
2. The first exoplanet was discovered in 1990. Since then, 5,514 have been found.
3. There are hundreds of billions of exoplanets in our Milky Way Galaxy, but they are very difficult to find because they orbit<sup>6</sup> a sun that is much brighter than they are. Trying to find an exoplanet is like putting a marble in front of a big light at night, standing really far away, and trying to see the marble.
4. There are two ways of detecting<sup>7</sup> exoplanets. The first way is by reducing the glare<sup>8</sup> from the star, kind of like using sunglasses. This only works for very big planets. The second way is by seeing how much the exoplanet dims the light from the star.

### Possible Evidence of Life on Another Planet Found

Last week, experts analyzed data from the James Webb Space Telescope and they said that they might possibly have found a planet with life. They will have to do a lot more testing before they can make a stronger statement, and even then there is no way of knowing for definite<sup>9</sup>, but it is certainly exciting news. They were looking at a planet called K2-18b, which is 124 light years away from us. It is much larger than Earth and it orbits a star called K2-18. That sun is much smaller than our sun, but K2-18b is much closer to its sun than we are to our sun. Tests have shown that the planet probably has water and it is close enough to its sun to get enough energy. Water alone doesn't mean that there will be life on the planet. That evidence comes from what the James Webb Satellite found in the atmosphere. It found carbon dioxide, methane, and a compound<sup>10</sup> called dimethyl sulfide. Methane and carbon dioxide are important for life and dimethyl sulfide is only produced by living organisms. Here on Earth, it is only produced by algae<sup>11</sup>. There is no way that it can be produced naturally. However, the experts haven't come out and said that they have found aliens because there is really no way of knowing. Just because dimethyl sulfide can only be produced by algae here on Earth, doesn't mean it can't be produced



another way on another world. And just because life here on Earth needs water and carbon dioxide, doesn't mean it is the same on other worlds. Still, it is a very interesting discovery and it shows the power of the James Webb Telescope. Who knows what we will find.

1. Respect for the Aged Day 敬老の日 2. estimate 推定する 3. invest 投資する
4. exoplanet 太陽系外惑星 5. solar system 太陽系 6. orbit 軌道を回る 7. detect 発見する
8. glare 太陽のぎらつき 9. definite 絶対 10. compound 複合の 11. algae 藻



### World record

Have you ever wanted to go to space? I would love to go up on a space shuttle, spend two days on the international space station and then come down again. I think 2 days would be long enough to enjoy myself. Valeri Polyakov, a Russian astronaut has the record for the longest time spent in space. He flew from Earth on the Soyuz TM-18 spaceship on January 8<sup>th</sup>, 1994. He landed on the Mir space station and he stayed there until March 22<sup>nd</sup>, 1995. He stayed in space for 427 days! Nobody has come anywhere near his record since then. When he returned to Earth, he had lost some muscle mass<sup>1</sup>, but other than that, he was in pretty good shape. Scientists are very interested in how human beings survive in space for a long time because someday soon we will be travelling to Mars.



For every minute you are angry, you lose 60 seconds of happiness.

– Ralph Waldo Emerson

### One thing we can do to help the environment

#### #3 Drive less

This is something I don't really have much trouble doing because I don't own a car, but driving less should be one of our goals. Whenever it is possible, we should walk or cycle. Using public transport<sup>2</sup> is also good. If we have to drive, then car sharing is a good idea because it is better to have four people in one car than to have four cars on the road. How are cars bad for the environment? There are four things.

- i) Cars produce enormous amounts of CO<sub>2</sub> because they burn gasoline, which is a fossil fuel<sup>3</sup>. Modern cars are more efficient<sup>4</sup> than older cars, but they still need to use gasoline. Burning 1 liter of gasoline releases 2.3 kg of CO<sub>2</sub> into the atmosphere. Around the world, cars use over 60% of all the petroleum produced.
- ii) Cars produce a lot of other types of gases as well. They produce nitrogen oxide, carbon monoxide, and other particulates<sup>5</sup>. These are bad for the environment and bad for us as well.
- iii) Cars produce a lot of noise pollution. The noise from cars affects animals and it affects us as well. People who live and sleep near busy roads have a shorter life expectancy<sup>6</sup> than people who live in quiet areas.
- iv) Car tires produce a lot of pollution as well. When cars accelerate<sup>7</sup> or brake<sup>8</sup>, rubber and other chemicals wear<sup>9</sup> off the tires. These tires can end up in the sea and car tires are the second greatest source of microplastics.



- 1.muscle mass 筋肉量 2.public transport 公共交通 3.fossil fuel 化石燃料 4.efficient 効率の良い 5.particulate 微粒子 6.life expectancy 平均余命 7.accelerate 早める 8.brake ブレーキする 9.wear すり減る