



Infographics for Scientific papers

Summary

Short Description: This document explains how to utilize infographics to support the pupils' understanding of genuine scientific work.

Language: English

Suitable for age: 14-18 years

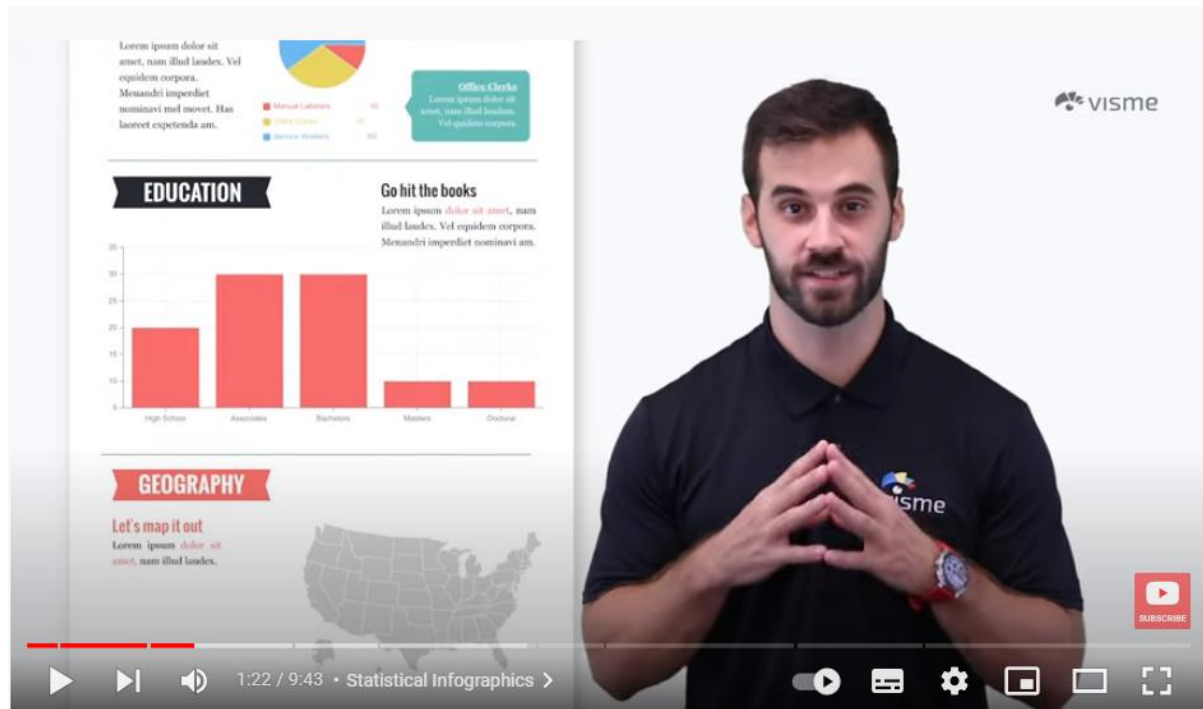
Key words: Scientific Literacy, Data Visualization, Dual Coding, Scientific Storytelling

Format: .doc

Link: <https://www.visme.co/>



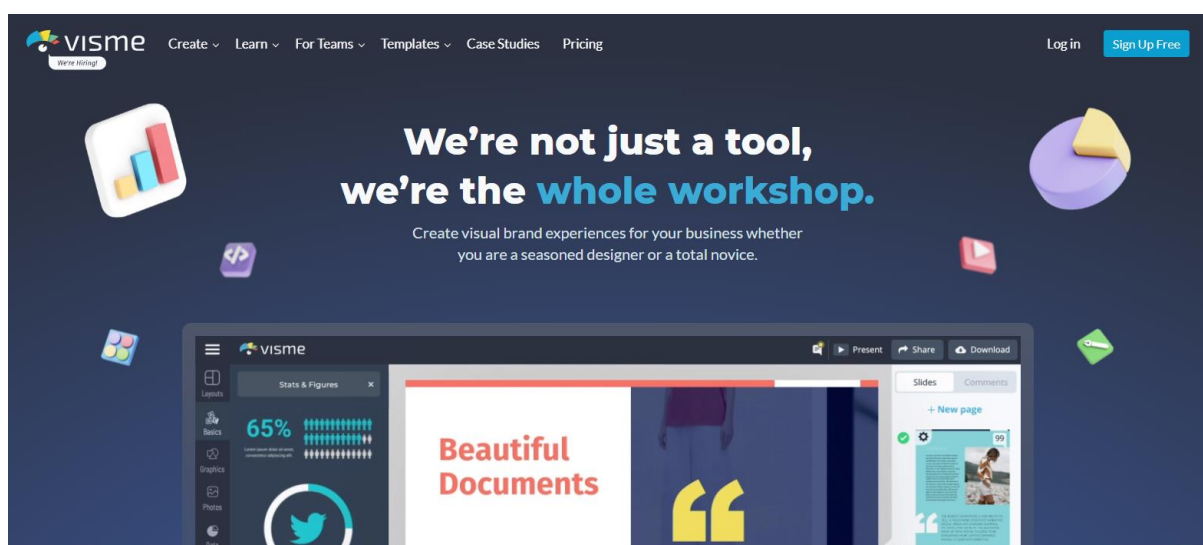
1. Go to https://www.youtube.com/watch?v=bZc-DjWd2BE&ab_channel=Visme and watch the **first couples of minutes of this video** to find out how to utilize infographics.



The main focus here is to combine words with visuals to support the understanding of scientific work.

2. At the following website you can find a tool for creating infographics:
<https://www.visme.co/>

You can sign up for free.




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3. Your students should sign up for educational use with the role “student” (see the screenshots below):

What do you want to use Visme for?


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Student



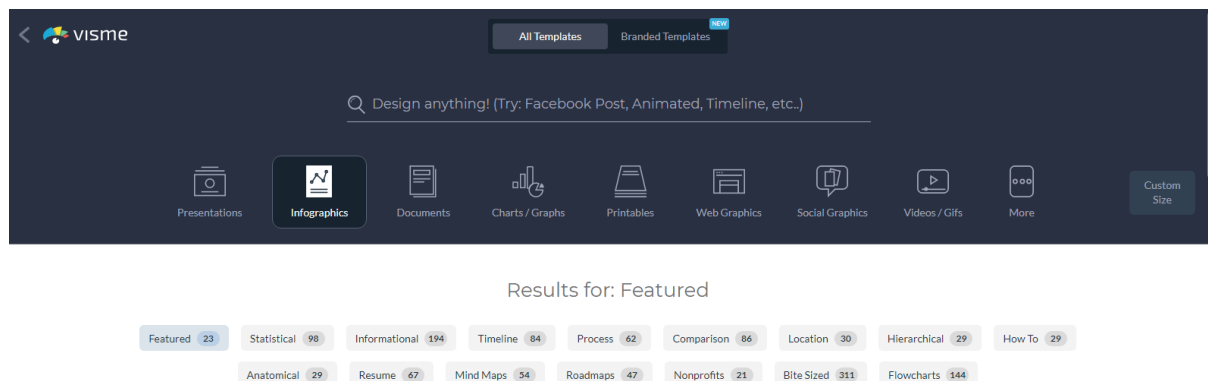
Educator



Institution



4. After the sign-up you can begin to build your own infographic:



5. Get some scientific publication, e.g. at <https://www.astronomy.com/> and choose a topic such as “Why haven’t humans reached mars?”

<https://www.astronomy.com/news/2021/09/why-havent-humans-reached-mars>



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Below you can see a section from this text:

"The first obstacle is just the sheer distance," Rucker says. The Red Planet is about 34 million miles (55 million kilometers) away at its closest point. But the distance to Mars isn't always the same. The Earth and Mars orbit the sun at different distances and speeds, meaning that there are certain more optimal periods to travel between the two, especially considering the idea is to not just to make it to Mars quickly, but to make it back.

"The trains to Mars are every 26 months," Sheehy says, adding that the last such window occurred in July 2020. That last train was perhaps the busiest period ever seen for interplanetary travel—three uncrewed Mars missions were launched last summer in the space of two weeks.

All 26-month windows are not the same, though. Sheehy notes that on top of this, there is a larger roughly 15-year cycle when that window is even more favorable than others. But Sheehy says that a vehicle optimized to reach the planet during the most favorable opportunity might not be necessarily the same we'd need for other years. Focusing all our efforts on reaching Mars in that window would mean we'd only have a chance every 15 years—it would be something of a "one-trick pony" in other words.

Technology of course plays a role in all of this. Most rockets that we've launched out of the atmosphere have been propelled by rocket fuel. But this fuel for an all-chemical propulsion system would take a lot of space, and wouldn't be optimal for the longest travel times. To reach Mars quicker and more often a system based on [nuclear thermal propulsion](#) or nuclear electric propulsion would be more effective—and that's if we set our sights low in terms of ship size, Sheehy says. His organization is working on [several different nuclear fission](#) technologies, including a fission surface power system. They plan to demonstrate one on the moon.

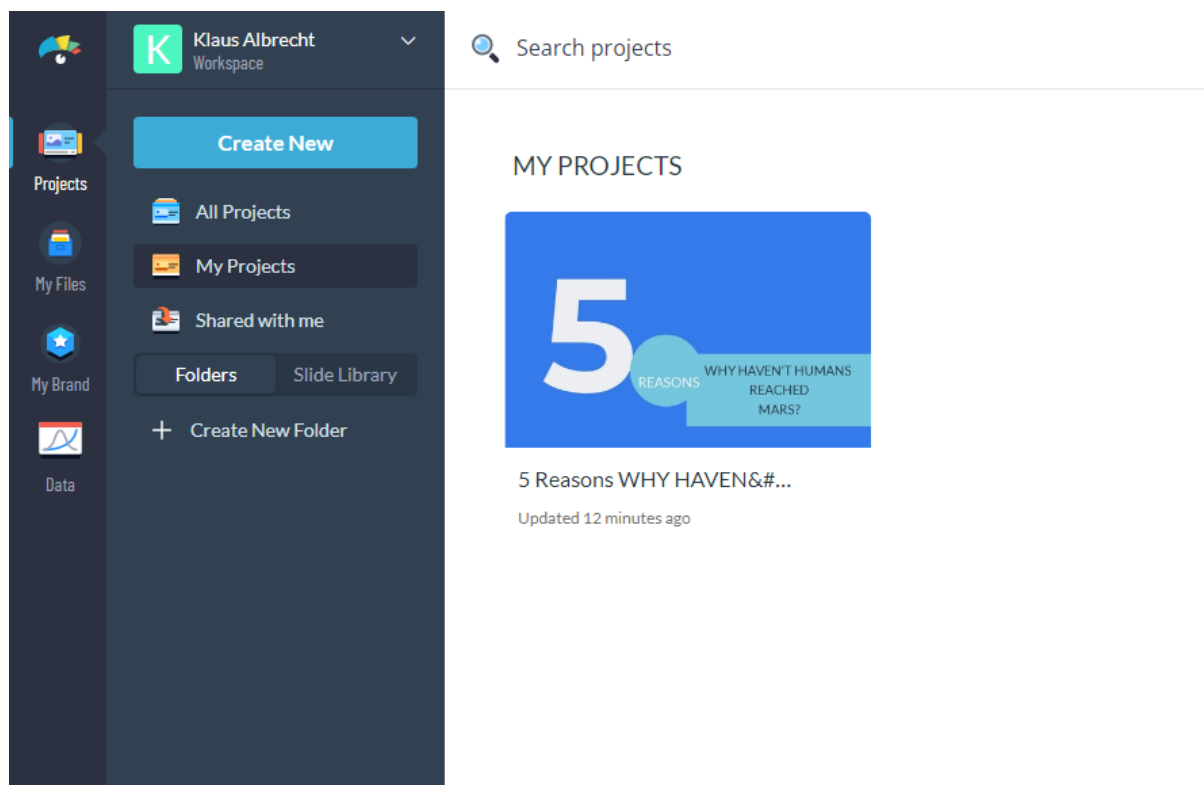
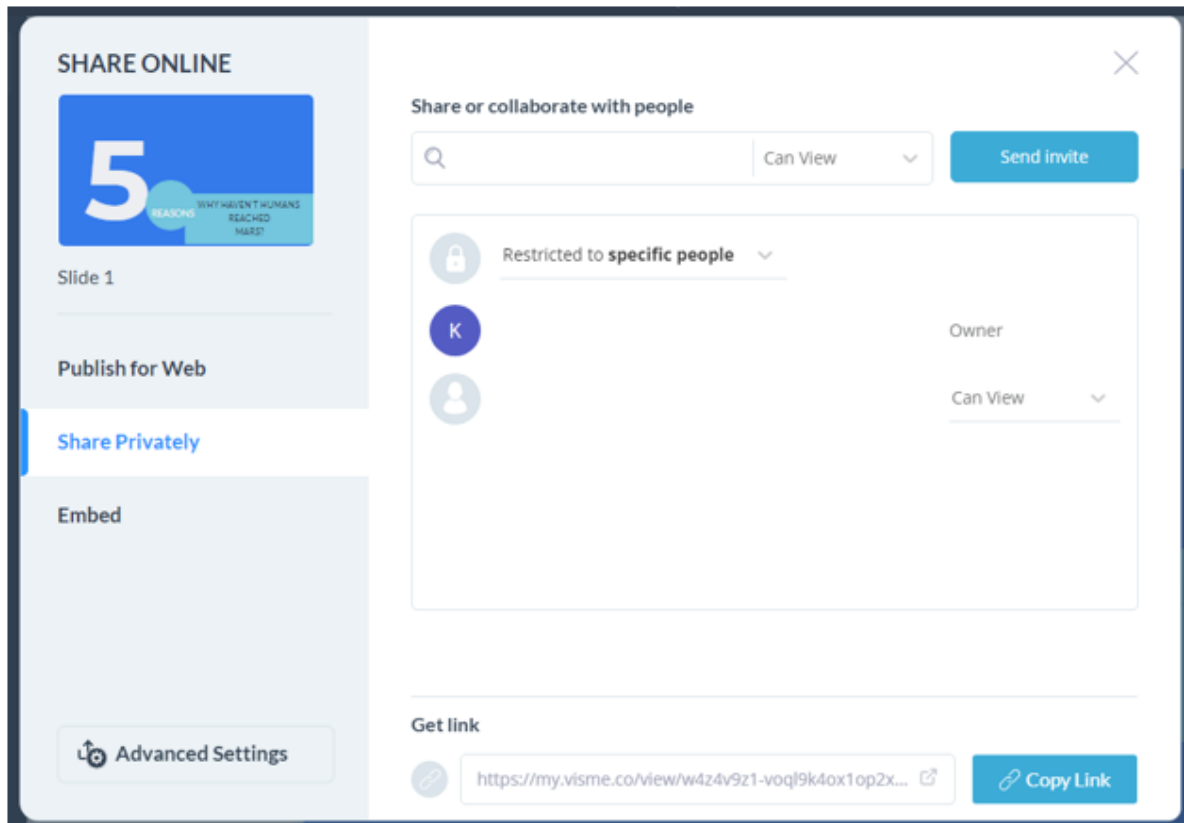
The human problem

Aside from technology, we also need to learn more about how humans—creatures that evolved to live in the Earth's atmosphere with the Earth's gravity—are going to cope with being in a low gravity, close proximity, close environment situation on spaceships for several months of transit.

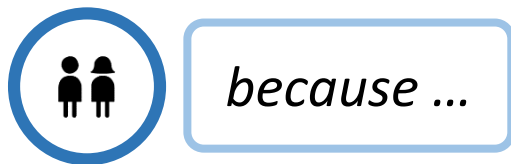
6. Your students should condense the information available through the scientific publication into a visual, such as an infographic with the help of the tool.



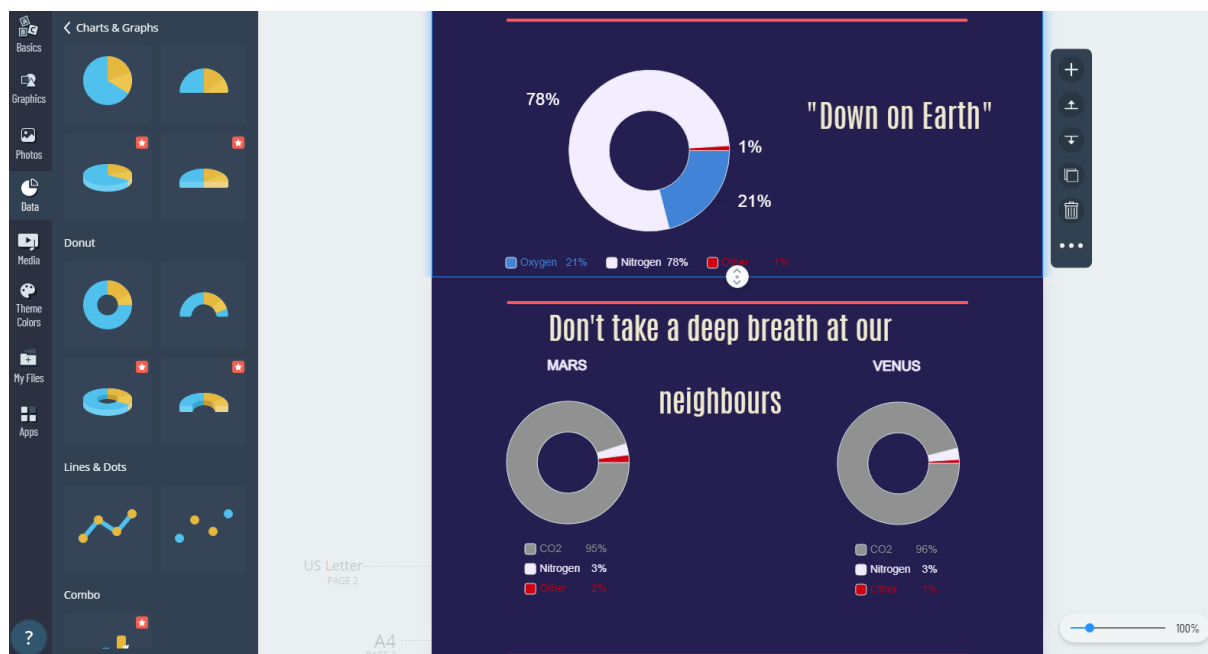
7. The finished infographic should be shared with the peers in the classroom and support a scientific discussion about the topic at hand.



The goal of infographics should be to enhance text based information with visuals, e.g. to combine icons with information such as the paragraph about the human problem and future Mars explorations:



8. With the help of the tool you can also summarize and communicate numbers. As a further example see the following charts about the composition of the atmosphere.



Further reading:

“Dual Coding With Teachers” by Oliver Caviglioli (2019).

“Teaching Walkthrus 2: Five-Step Guides to Instructional Coaching” by Tom Sherrington and Oliver Caviglioli (2021).



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