



Summer School 2022

Toolbox DATA TALKS

LaSciL

Large Scientific Infrastructures enriching Online and
Digital Learning

July 2022

ÖSTERREICHISCHES WELTRAUM FORUM
AUSTRIAN SPACE FORUM



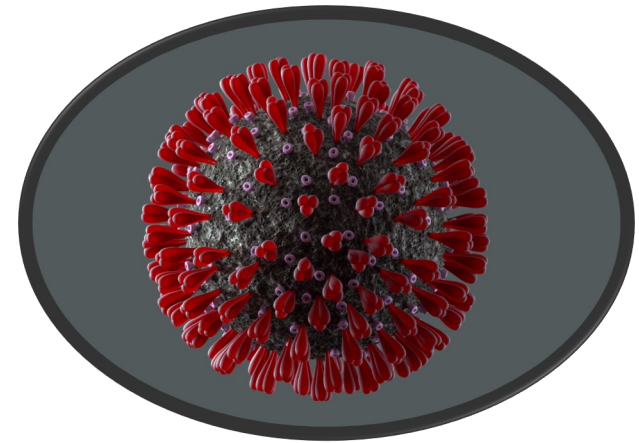
oewf.org

Co-funded by the
Erasmus+ Programme
of the European Union



What is DATA?

- %90 of Data has been created in last 2 years
- Understand Data
- Communicate by Visualization
- Bringing Data Science to educations



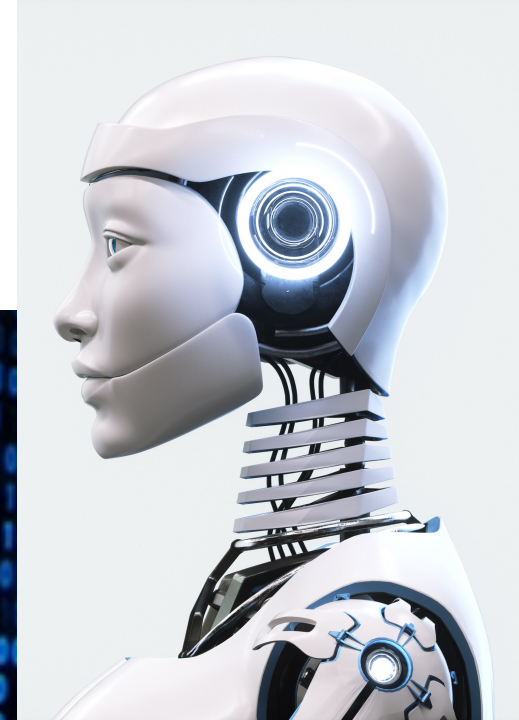
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What is DATA?



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What is DATA?



How to do DATA TALKs? – www.youcubed.org

- Re-think **TEACHING** and **LEARNING**
- Incorporating with tools and technologies
- Communicate by Visualization
- Bringing Data Science to educations
- No expertise needed!

- Age: 7-18 years
- Key words: Data Literacy, Data Visualization
- @AT curriculum changing to include DATA SCIENCE




How to understand Data Graphics?

What do you notice? What do you wonder?

- Giving time for :
 - Process-understand each item
- Asking key questions
- Commenting
- Comparing
- Interpreting the DATA

OeWF's suggested TOOL: [youcubed.org](https://www.youcubed.org)

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56,681,490
visits and counting!



Exploration in :
DATA SCIENCE

TOOL: [youcubed.org](https://www.youcubed.org)



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Sign Up

- Ideas
- Tasks
- Data Science
- Teaching to Big Ideas
- Summer Camps
- Films
- Courses
- Evidence
- News
- Search

Data Science Online Course Lessons

Lessons from "21st Century Teaching and Learning." Grade ranges suggested, but with creativity, they can be used in any grade!

Download Elementary Lesson: Sorting Buttons

Download Elementary Lesson: Data Tells Us about Ourselves

Download Elementary Lesson: Supply Parade

Download Elementary/Middle Lesson: Swimming with Whales (thanks to MidSchool Math)

Download Middle/High Lesson: What's in the Bag?

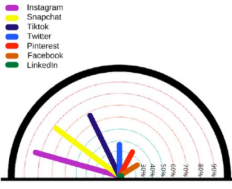
Download Middle/High Lesson: What's the Chance of That?

Download Middle/High Lesson: Can They Say That?


TOOL: youcubed.org



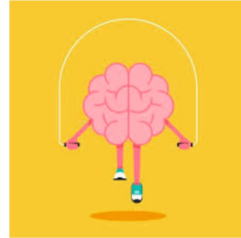
Housing, Education & Wages
 Grades 6-12



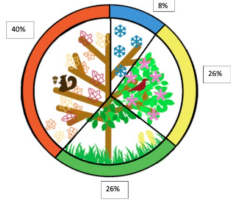
Social Media
 Grades 5-12




Melting Ice
 Grades K-12



Growth Mindset
 Grades K-12




Favorite Season



What do you notice? What



What is a "Data Talk"?



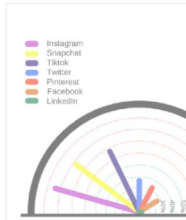
Women's Soccer

TOOL: youcubed.org

↳ Data Science
↳ Data Talks



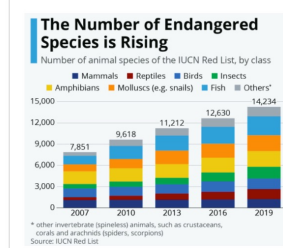
Housing, Education & Wages
Grades 6-12



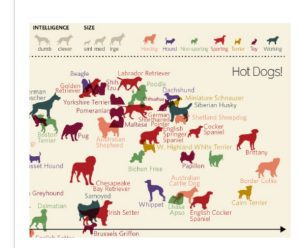
Social Media
Grades 5-12



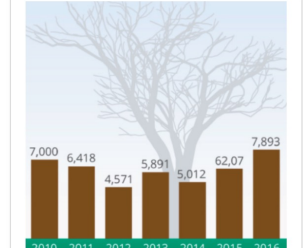
Hand Washing
Grades K-16



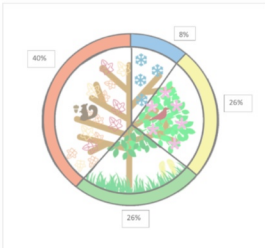
Endangered Species
Grades 3-16



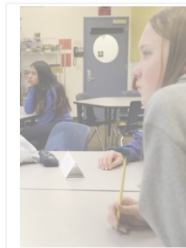
Dogs!
Grades K-16



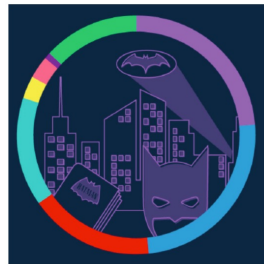
Deforestation
Grades 3-16



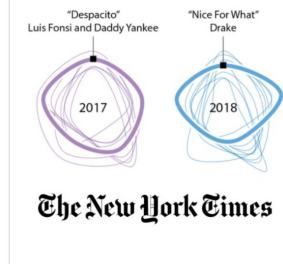
Favorite Season



What do you notice?



Batman
Grades K-16



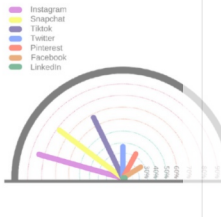
The New York Times
What's Going On in This Graph?

TOOL: youcubed.org

↳ Data Science
↳ Data Talks



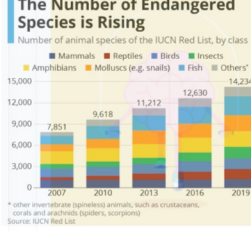
Housing, Education & Wages
Grades 6-12



Social Media
Grades 5-12




Hand Washing
Grades K-12



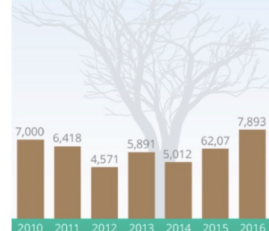
The Number of Endangered Species is Rising
Number of animal species of the IUCN Red List, by class

Year	Total Species
2007	7,851
2010	9,618
2013	11,212
2016	12,630
2019	14,234

Growth Mindset Endangered Species
Grades K-12

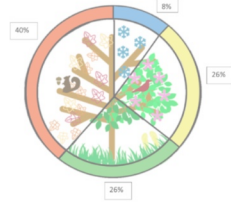


Dogs!
Grades K-16

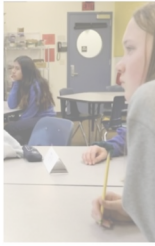


Deforestation
Grades 3-16

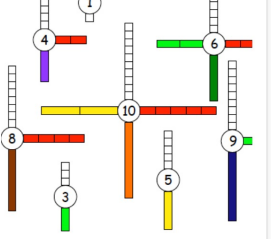
Year	Number of Trees Lost
2010	7,000
2011	6,418
2012	4,571
2013	5,891
2014	5,012
2015	62,07
2016	7,893




Favorite Season



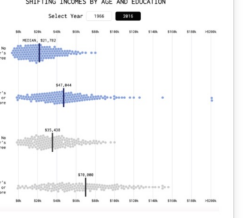
What do you notice



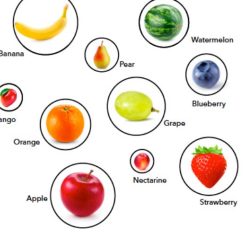
One Through Ten
Grades K-16



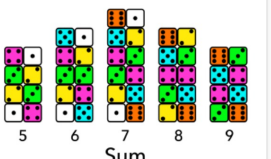
Water Usage
Grades K-16



Shifting Incomes
Grades 4-16

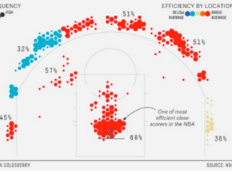


Popular Fruits
Grades K-16

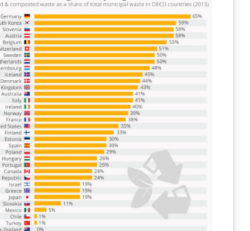


Sums of two dice

Dice Sums
Grades K-16

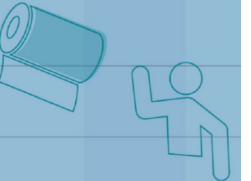


Basketball
Grades 4-16



The Countries Winning The Recycling Race

Recycling
Grades 4-16



Paper Towels
Grades 4-16

Topic Solving Problems with Data: Cars-Data creation:LAUNCH



Source: Image by [Shutterstock.com/Aleksei Kazachok](https://www.shutterstock.com/Aleksei-Kazachok).

Topic Solving Problems with Data: Cars-Data creation:EXPLORE



Source: Image by [Shutterstock.com/Aleksei Kazachok](https://www.shutterstock.com/Aleksei-Kazachok).

What is the most common car color in your area?

Topic Solving Problems with Data: Cars-Data creation:DISCUSS





Source: Image by [Shutterstock.com/Aleksei Kazachok](https://www.shutterstock.com/Aleksei-Kazachok).

How to implement into a Space Mission?

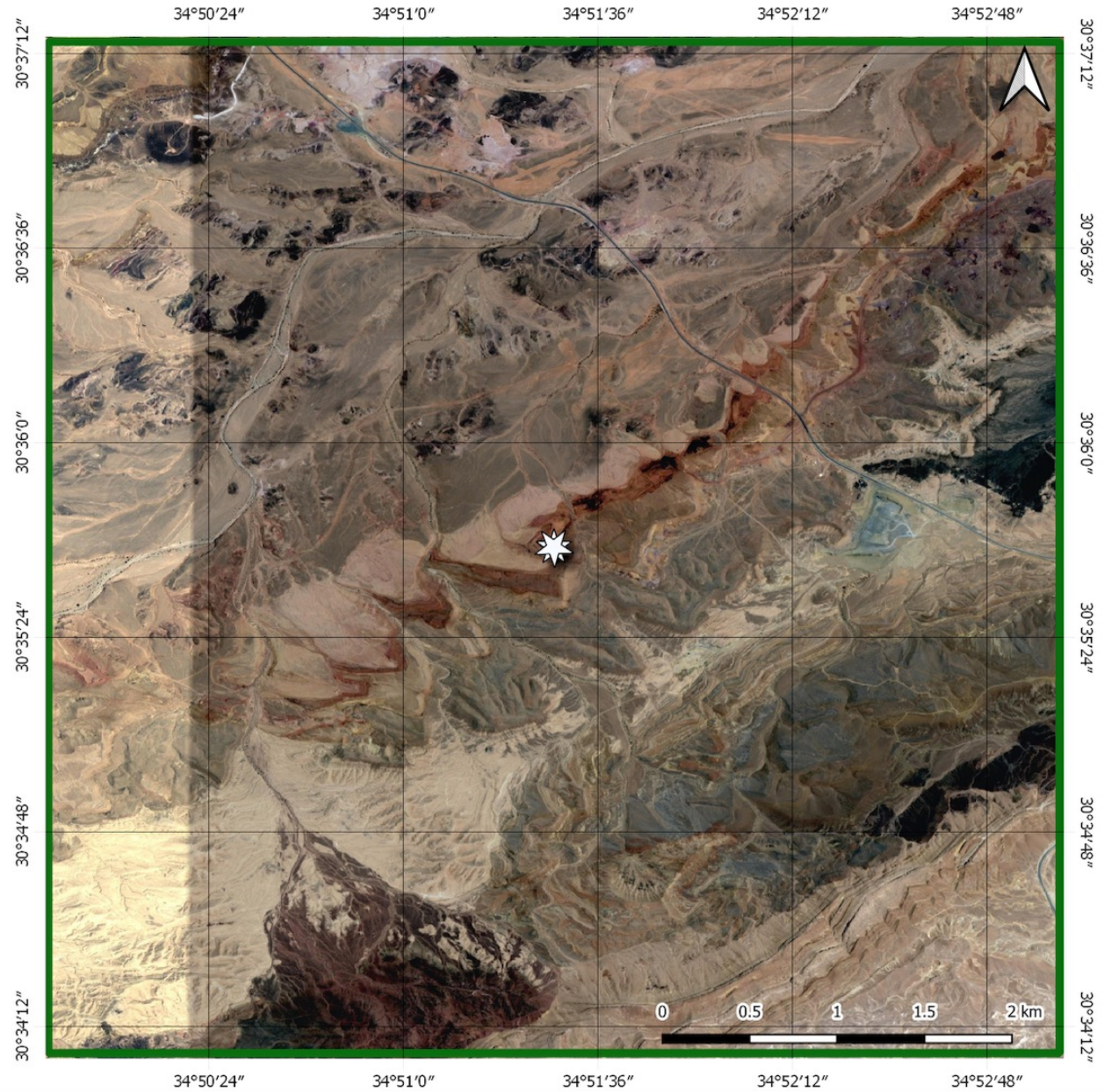
Legend

Map boundaries

 5 x 5 km

 Base Station

Map source: Google Maps, 2020



What is the most common geological formation?

Rock-color-map

Legend

Map boundaries

5 x 5 km



Base Station

tectonics

Main road

Road

Trail

Path

Bike trail

ROI

rock color map

1 yellow

2 beige to dark grey

3 black

3a bright blue

4 bright beige

5 brown grey shaded

6 red

7 white

8 white beige

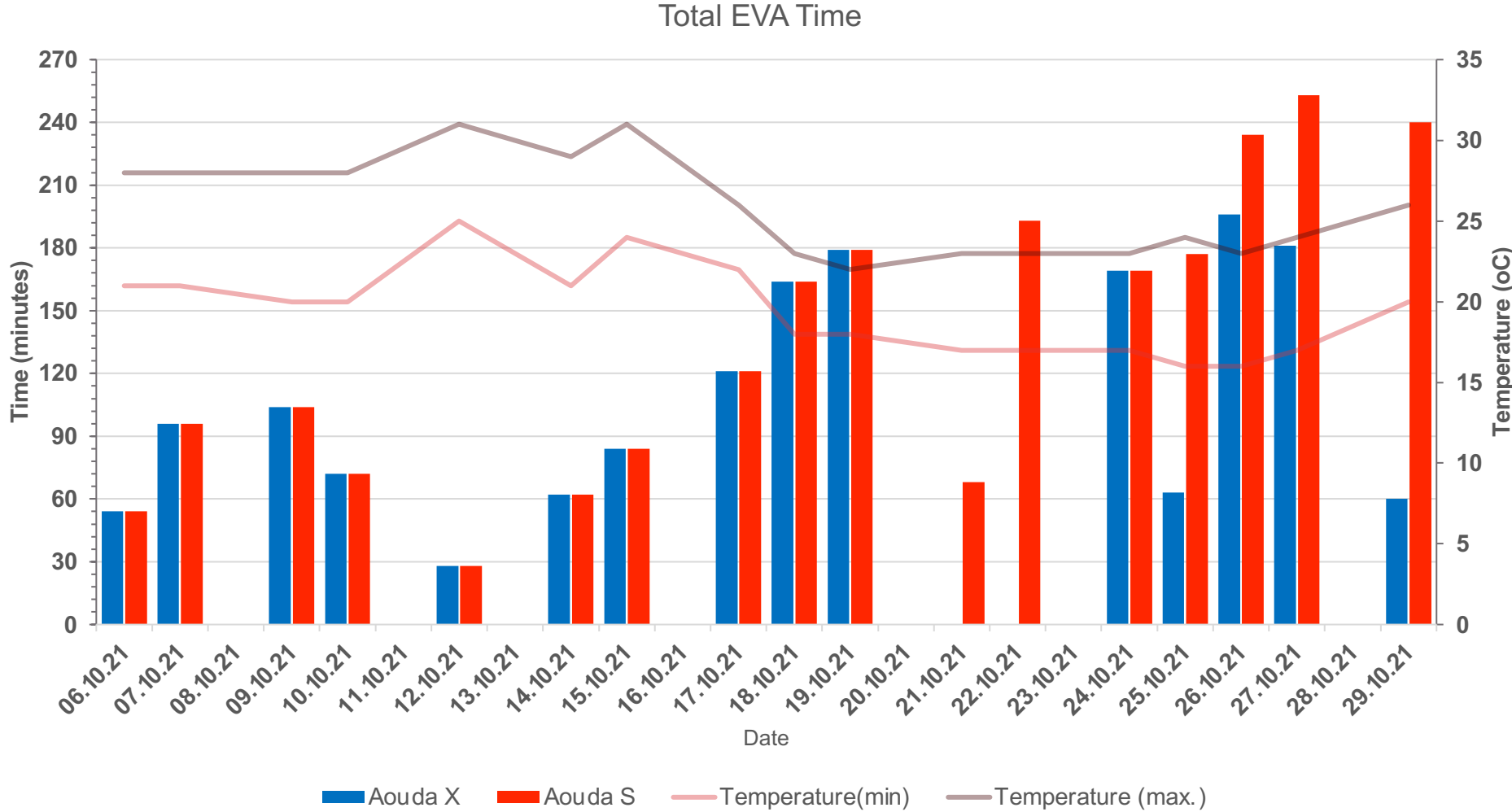
9 dark red

10 grey

Map source: Google Maps, 2020



Data Talk: an example and DATA SET from AMADEE20



- 1- Giving time
- 2- Asking key questions
- 3- Commenting
- 4- Comparing
- 5- Interpreting the DATA



Wir ermöglichen
die Leidenschaft Weltraum
zu leben.

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