



usability test results

TEAM LOCISPACE

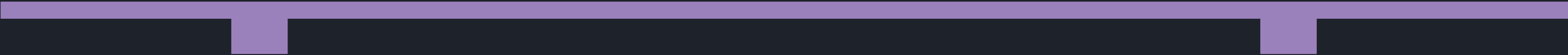
14.12.2022

AGENDA



1

2



process

result

comprehensive test guide

AR VR Usability test guide

Hello, we would like you to participate in our usability test to find out about the performance of our learning application. This project is part of our course AR VR at the technische Hochschule Ingolstadt.

Before we continue we want to ask you if you could read through and process the following consent agreement

Consent Agreement

I agree to participate in the study conducted by the team Locispace of the UXDM_ARVR 2022 module.

I understand that participation in this usability study is voluntary and I agree to immediately raise any concerns or areas of discomfort during the session with the study administrator. I allow for my data to be processed and used for research purposes, published in anonymized form and shared with externals under equal conditions.

I am aware that I can revoke my permission in the future by reaching out to the conductors of this study.

Please sign below to indicate that you have read and you understand the information on this form and that any questions you might have about the session have been answered.

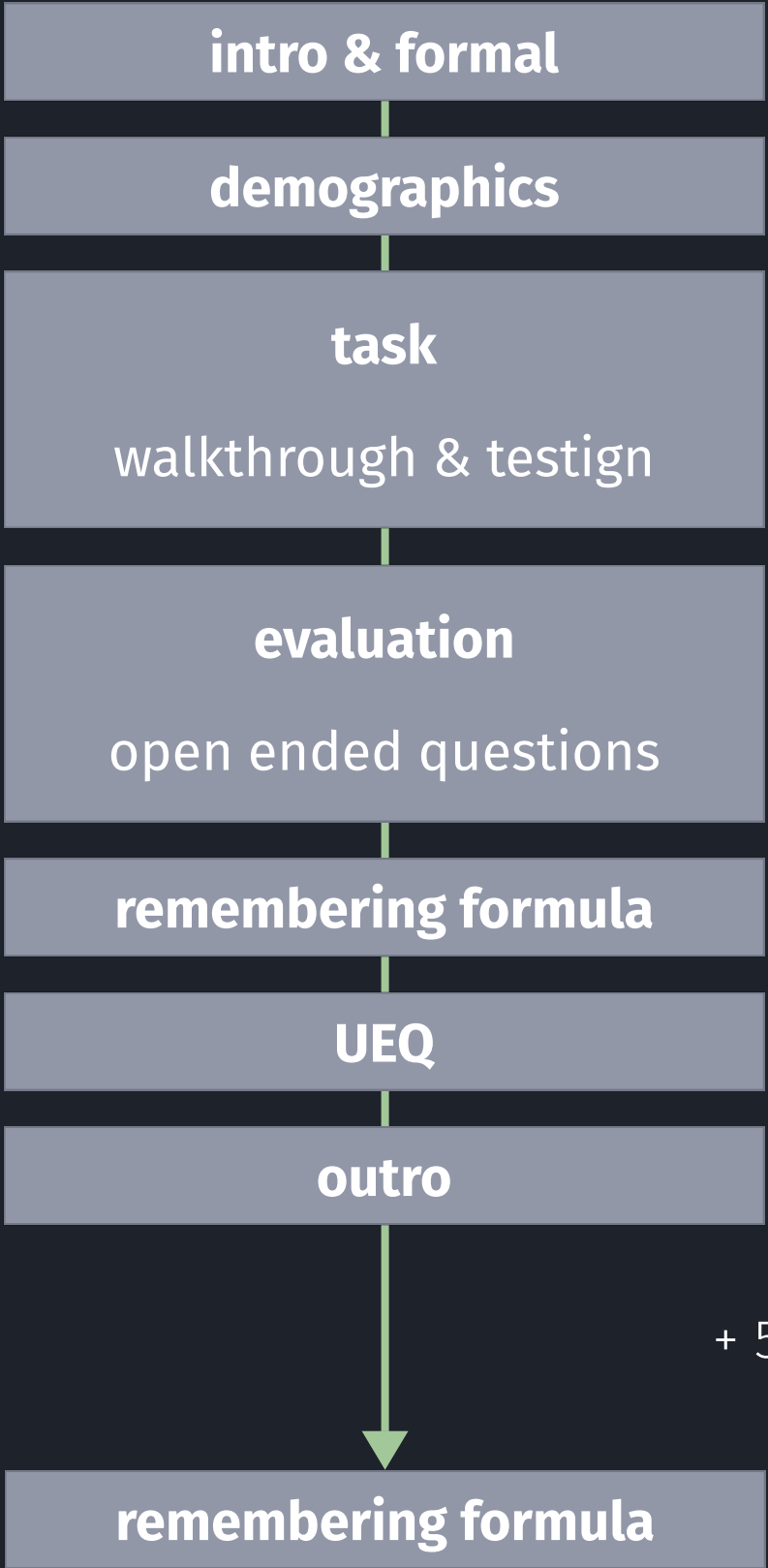
Date: _____

Please print your name: _____

Signature: _____

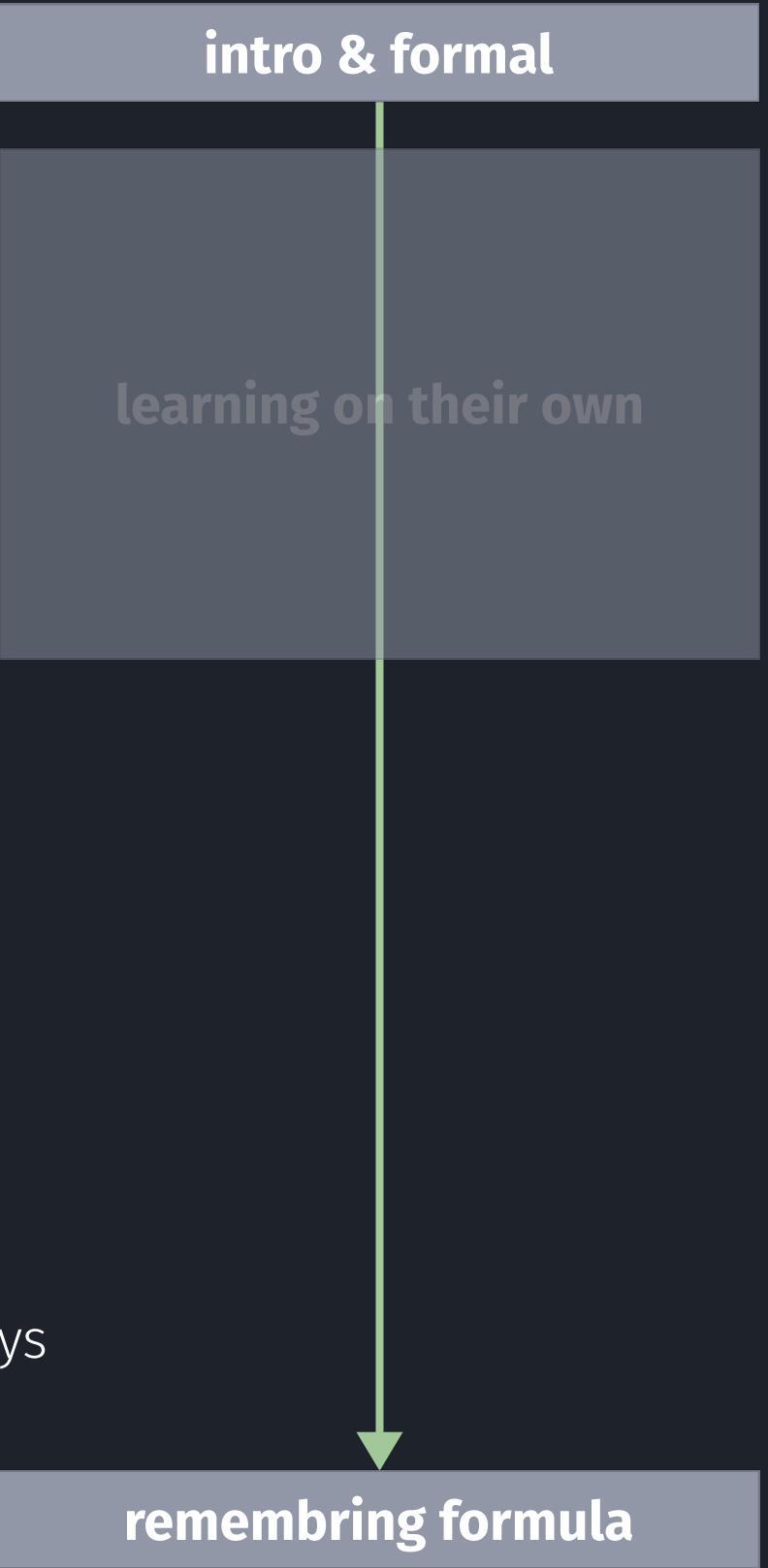
PROCESS

test group



+ 5-7 days

intro & formal



control group

conducting studys

- 5 participants (+ 4 for controll group)
- sessions à 25-60 min
- Monday - Thursday - Monday



2

3

ss

results

learn

Pitch

Pitch

Pitch

Pitch

Pitch

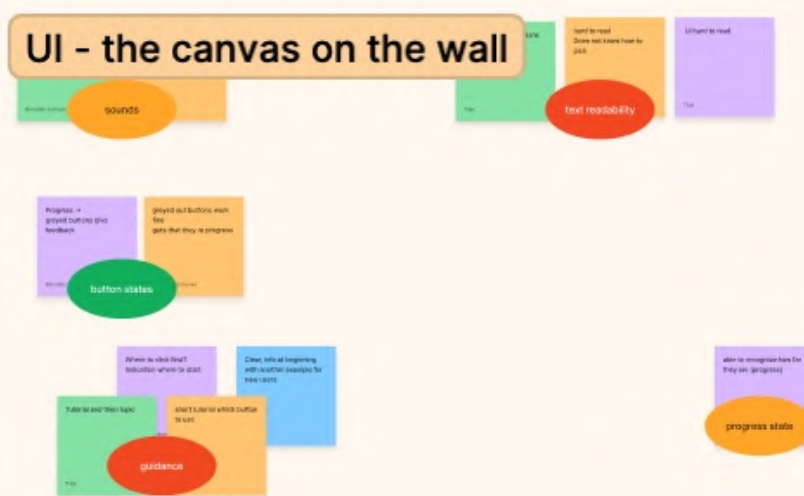
Pitch

RESULTS

Room - the environment



UI - the canvas on the wall



Mindpalace building - how do users interact wit...



Assets - general



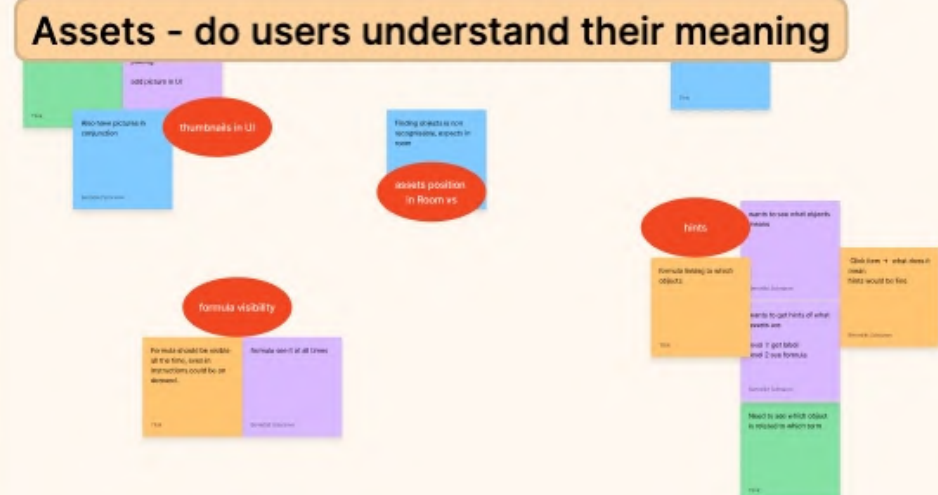
Assets - doing changes



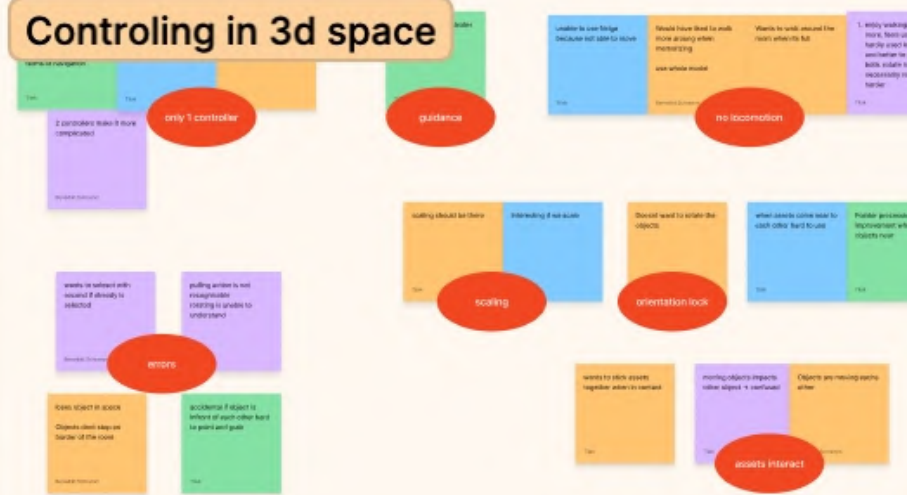
Assets - how to show the formulas Modifiers



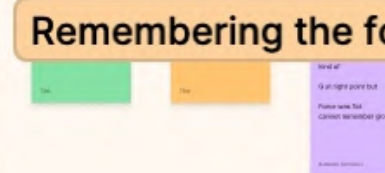
Assets - do users understand their meaning




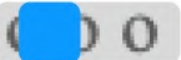
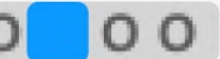

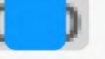
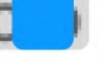

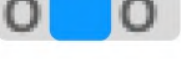
Controlling in 3d space



Remembering the formula



UEQ results

English version		
obstructive	o o o o 	supportive
complicated	o o o o 	easy
inefficient	o o o 	efficient
confusing	o o 	clear
boring	o o o o o 	exciting
not interesting	o o o o o 	interesting
conventional	o o o o o o 	inventive
usual	o o o o 	leading edge

→ locispace is good at sparking interest but the usability can still be improved

LEARNINGS

3

learnings

Room

table position ✓

workflow freedom ✓

more rooms

**assets need to fit to
shelves**

ordering assets freely ✓

UI

readability

multistate buttons ✓

asset thumbnails

users miss formula

sounds on click ✓

select assets in UI

progress state

Assets

delete & change

modifier assets

outlines/colors

directly edit

hints / labels what it is

own assets

correlations

physics properties

Controllers

using only 1 controller

**hints/tutorial on
controllers**

option: scale

controls buggy

**users want to walk
with controller**

**lock orientation
upwards**

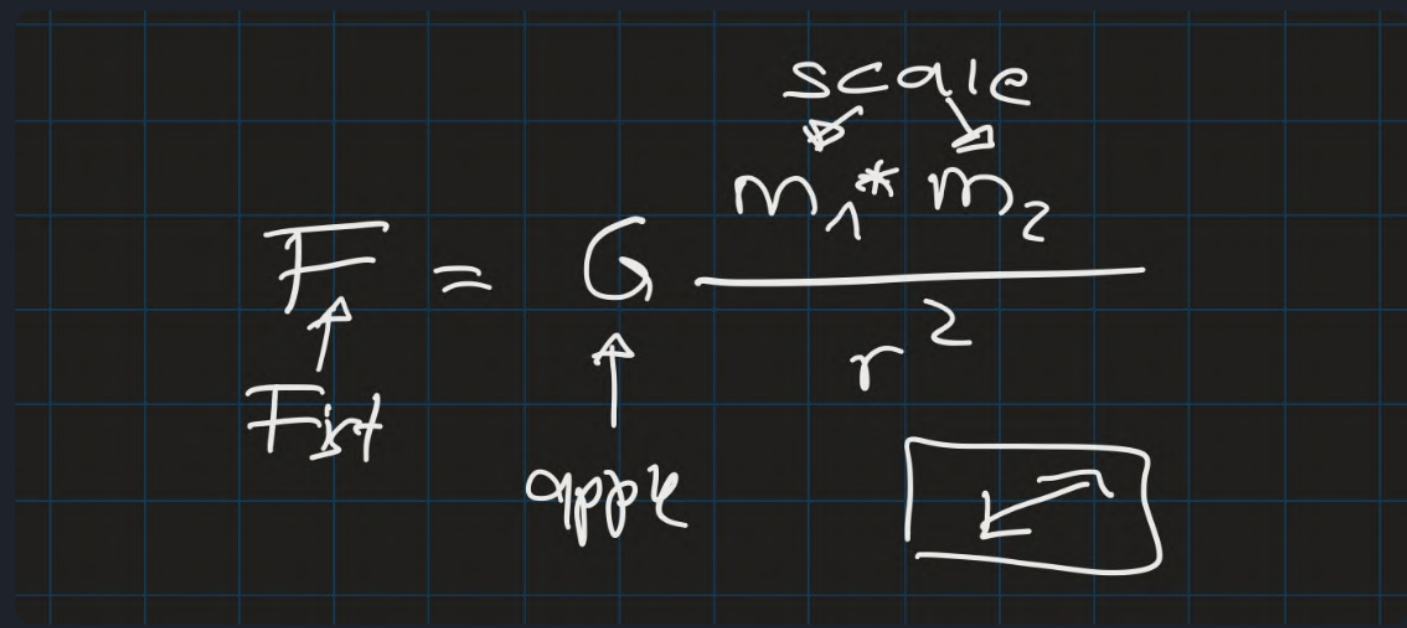
**assets interact by
accident**

+ 5-7 days ...

RESULTS

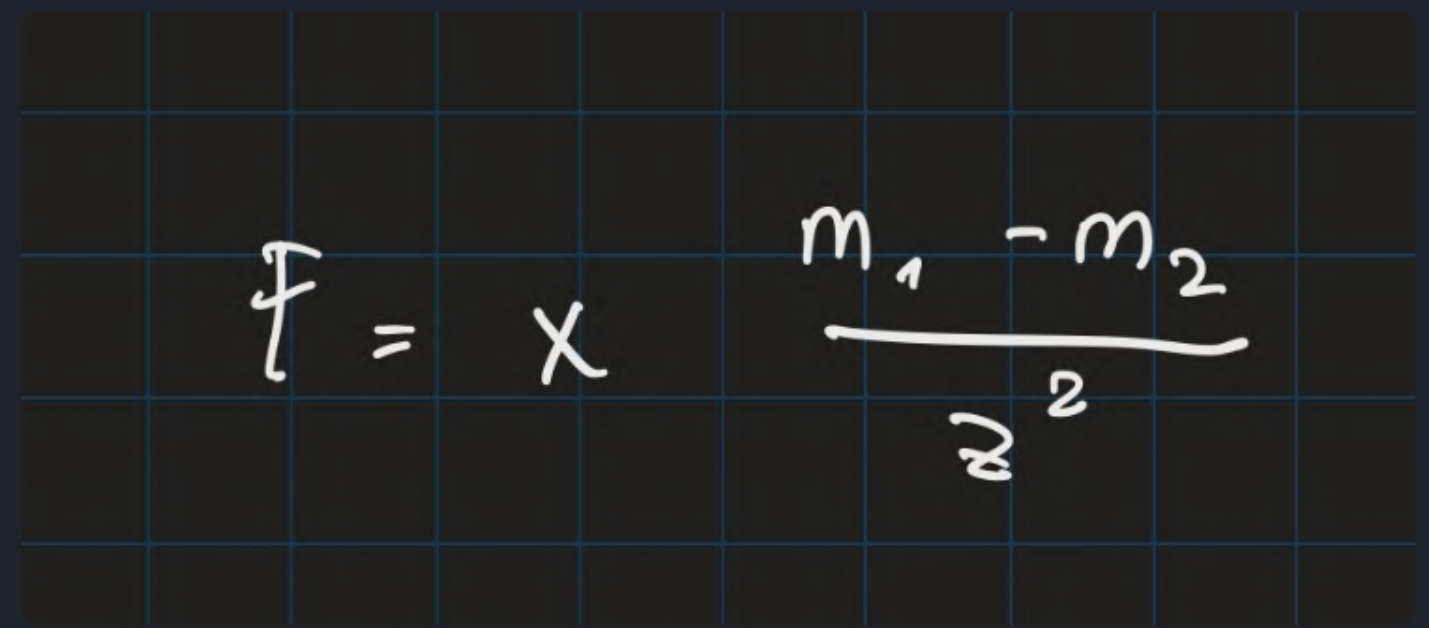
$$F = G \frac{m_1 m_2}{r^2}$$

original



A handwritten version of the equation $F = G \frac{m_1 m_2}{r^2}$ on a grid background. The equation is annotated with several elements: an arrow points from the F to F_{int} below it; an arrow points from the G to the word "apple" below it; an arrow points from the $m_1 m_2$ term to the word "scale" above it; and a box with a double-headed arrow is drawn below the r^2 term.

with locispace



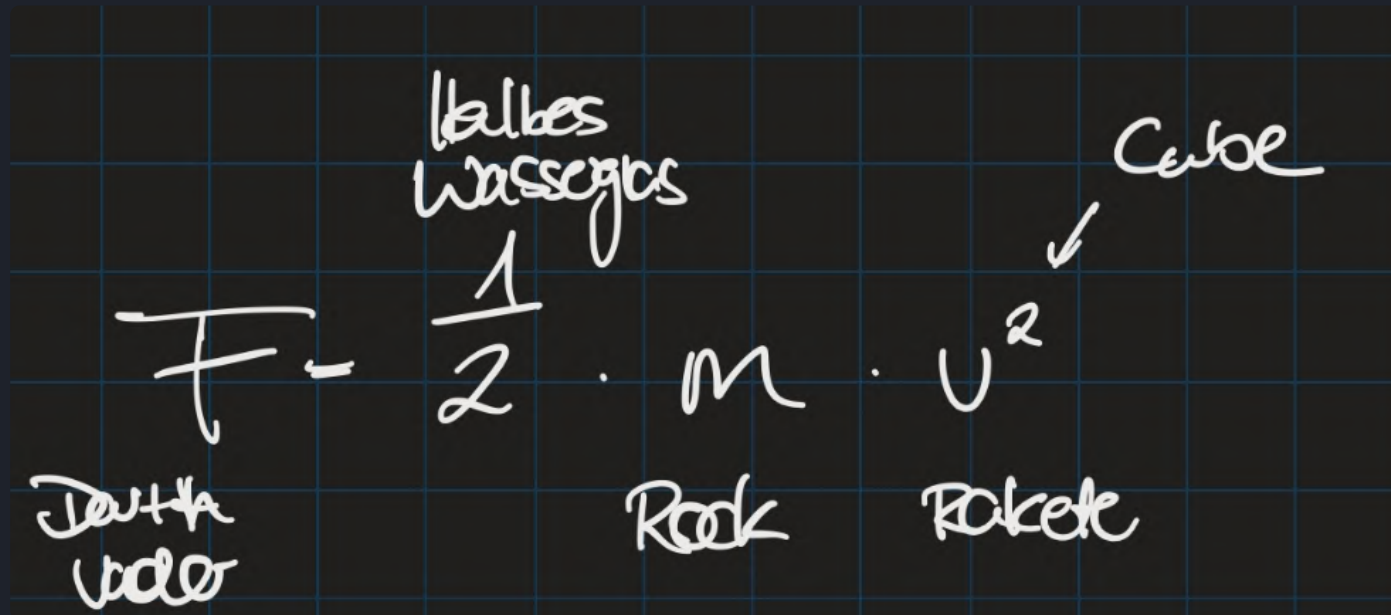
A handwritten version of the equation $F = X \frac{m_1 - m_2}{r^2}$ on a grid background. The equation is written in a more compact, traditional style.

traditional

RESULTS

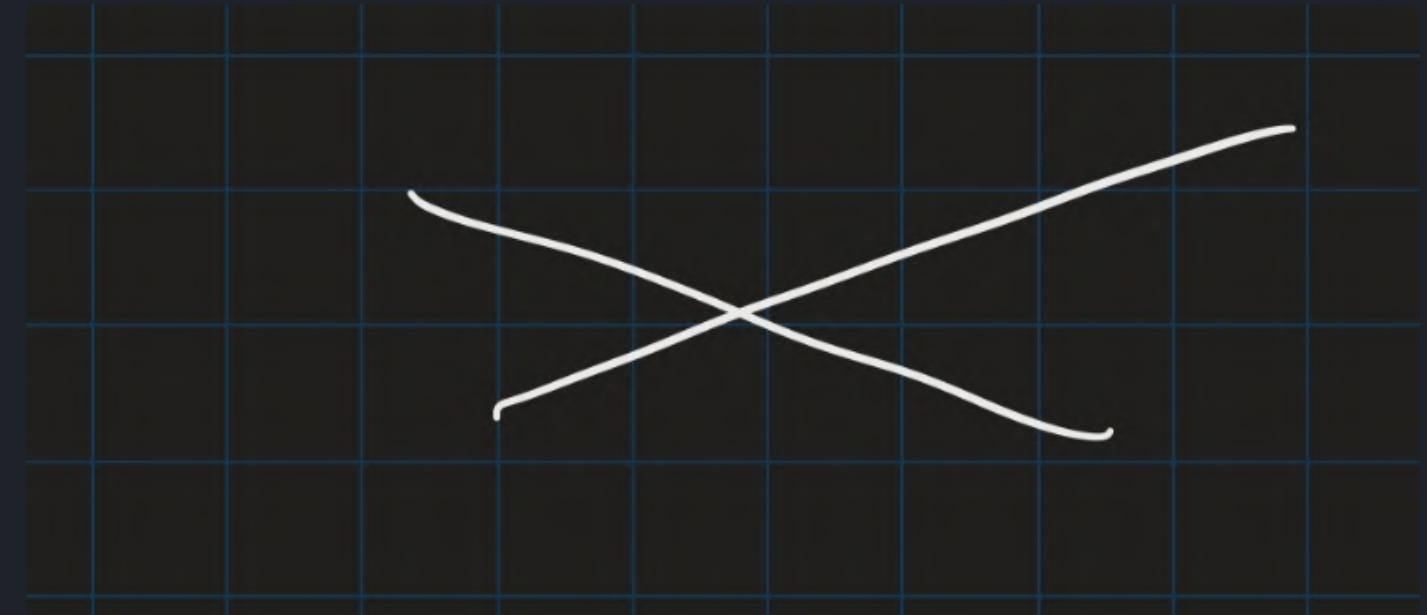
$$K = \frac{1}{2}mv^2$$

original



A handwritten equation $F = \frac{1}{2} \cdot m \cdot v^2$ on a grid background. The equation is annotated with locispace: 'F' is labeled 'Death video' below it; '1/2' is labeled 'Halbes Wasserjoch' above it; 'm' is labeled 'Rock' below it; 'v' is labeled 'Rakete' below it; and 'v^2' is labeled 'Cube' above it with an arrow pointing to the exponent.

with locispace



traditional



working on the improvements...