Seeker Chronicles

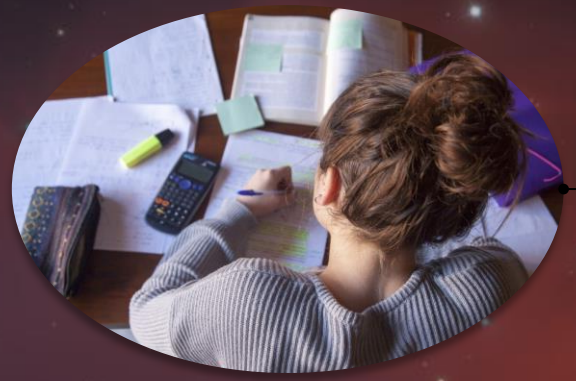
The Universe in a Card Game

Fulvio Flamini — OneStone Studios

- Community
- Scuole
- Gameplay

Vision

Education is not Captivating



Famiglie

Teens

Societal NEEDS

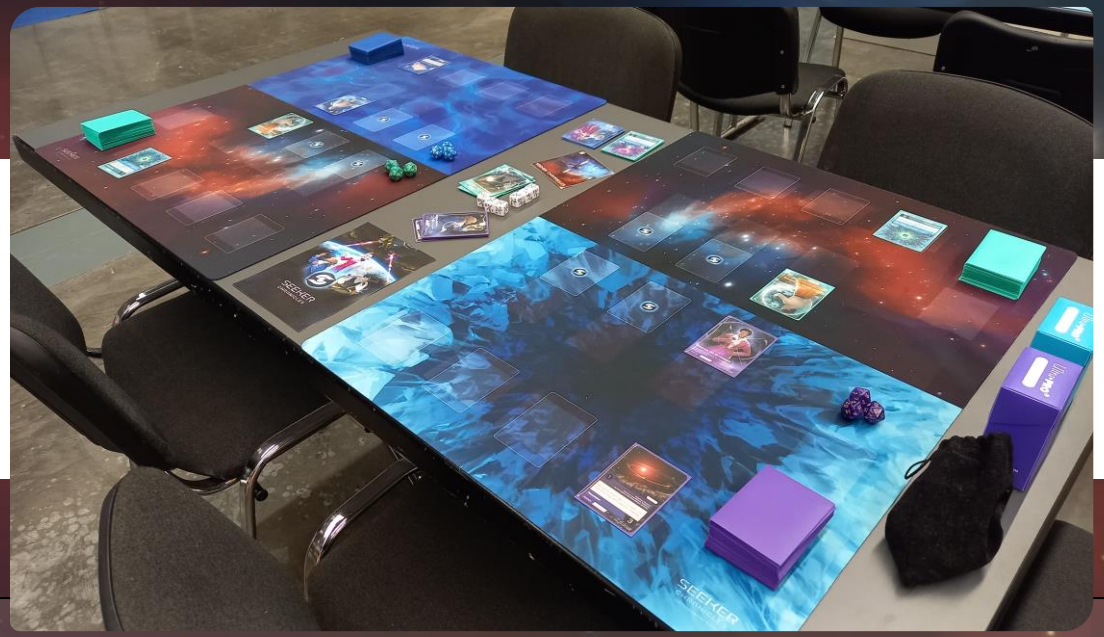
Captivating education ○
Tech and Science literacy ○

GAP

Gamers NEEDS

- Fresh games
- Captivating content and rewards

Education becomes Captivating



"Fresh, elegant and filled with interesting choices."

— Richard Garfield (Magic: The Gathering +)

Education becomes Captivating

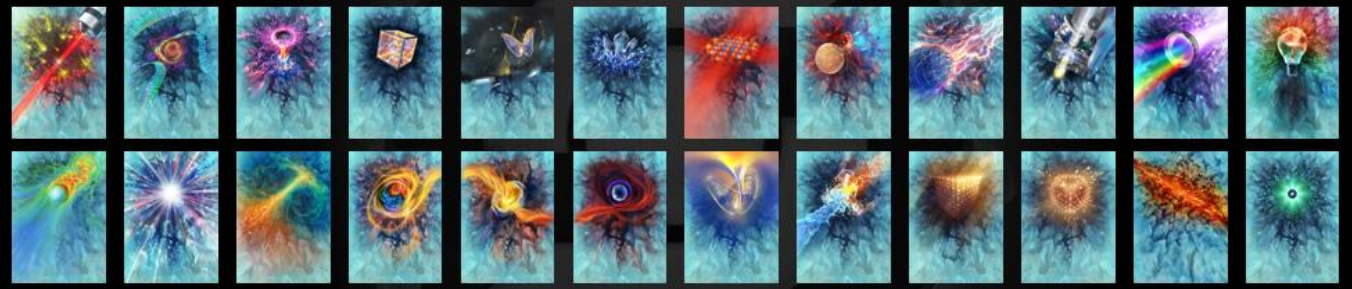
Tangential learning

“Exposure to new knowledge
in an enjoyable and familiar context.”

Stephen Hawking
Emmy Noether

Three domains of knowledge

Domains feature real science

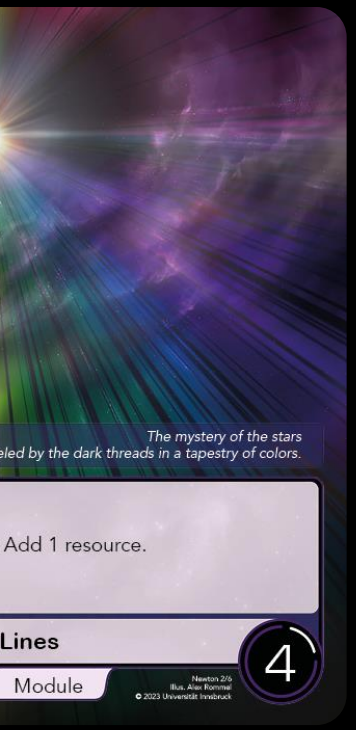


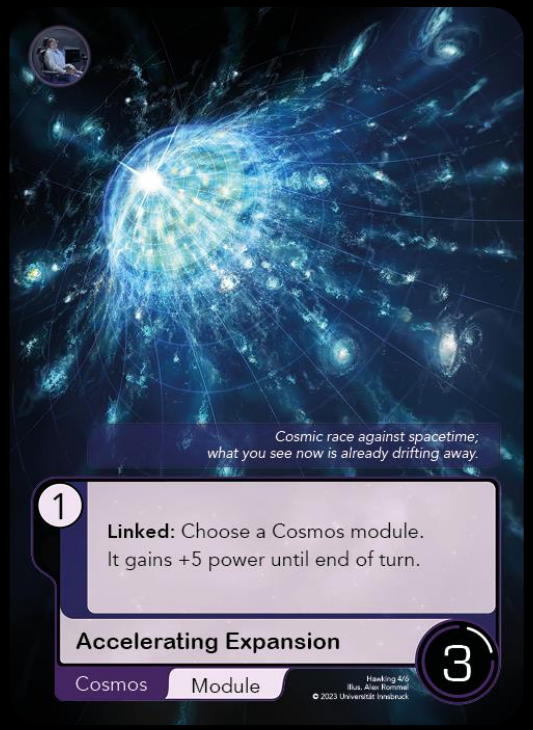
Seekers are real scientists

Seekers grant players their Chronicles

Cards show real science

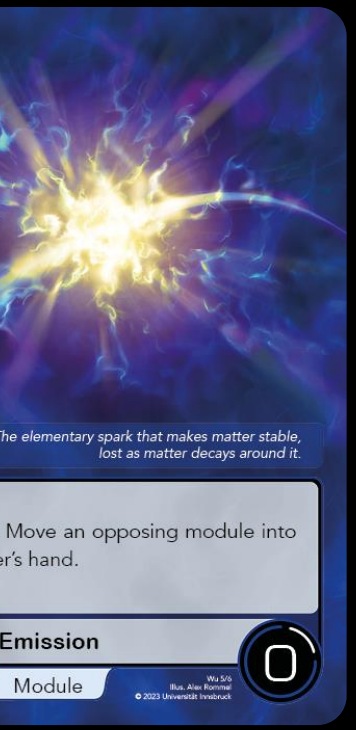
From the infinitely large

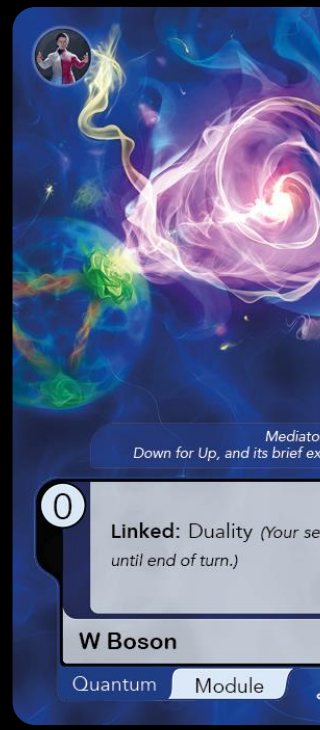




Cards show real science

To the infinitely small





Cards show both Tech and Concepts

Solar Sail

Strange Attractor

Cards show timely topics

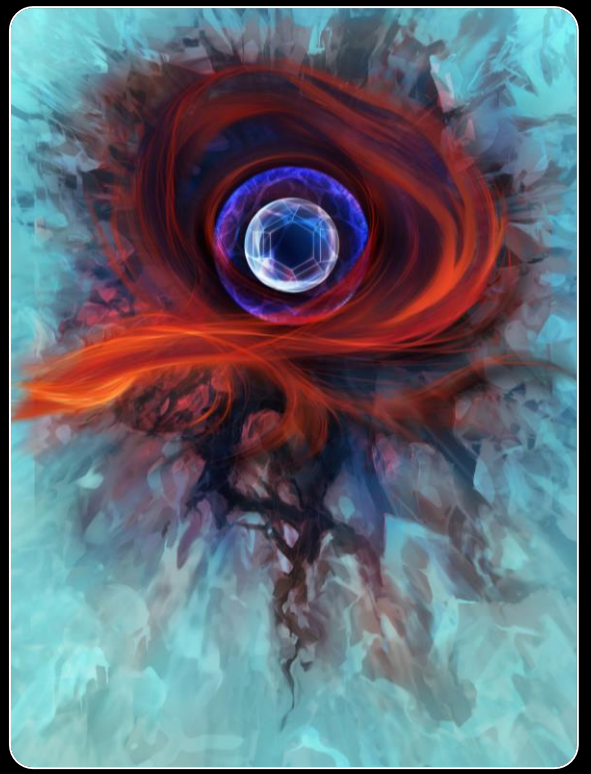
Environmental Impact

Planetary Climate Crisis

Cards can be educational

1st Law

2nd Law



3rd Law

Cards can tell a story

W Bosons mediate the Weak Interaction

Responsible for the Radioactive Decay

Radioactive Decay

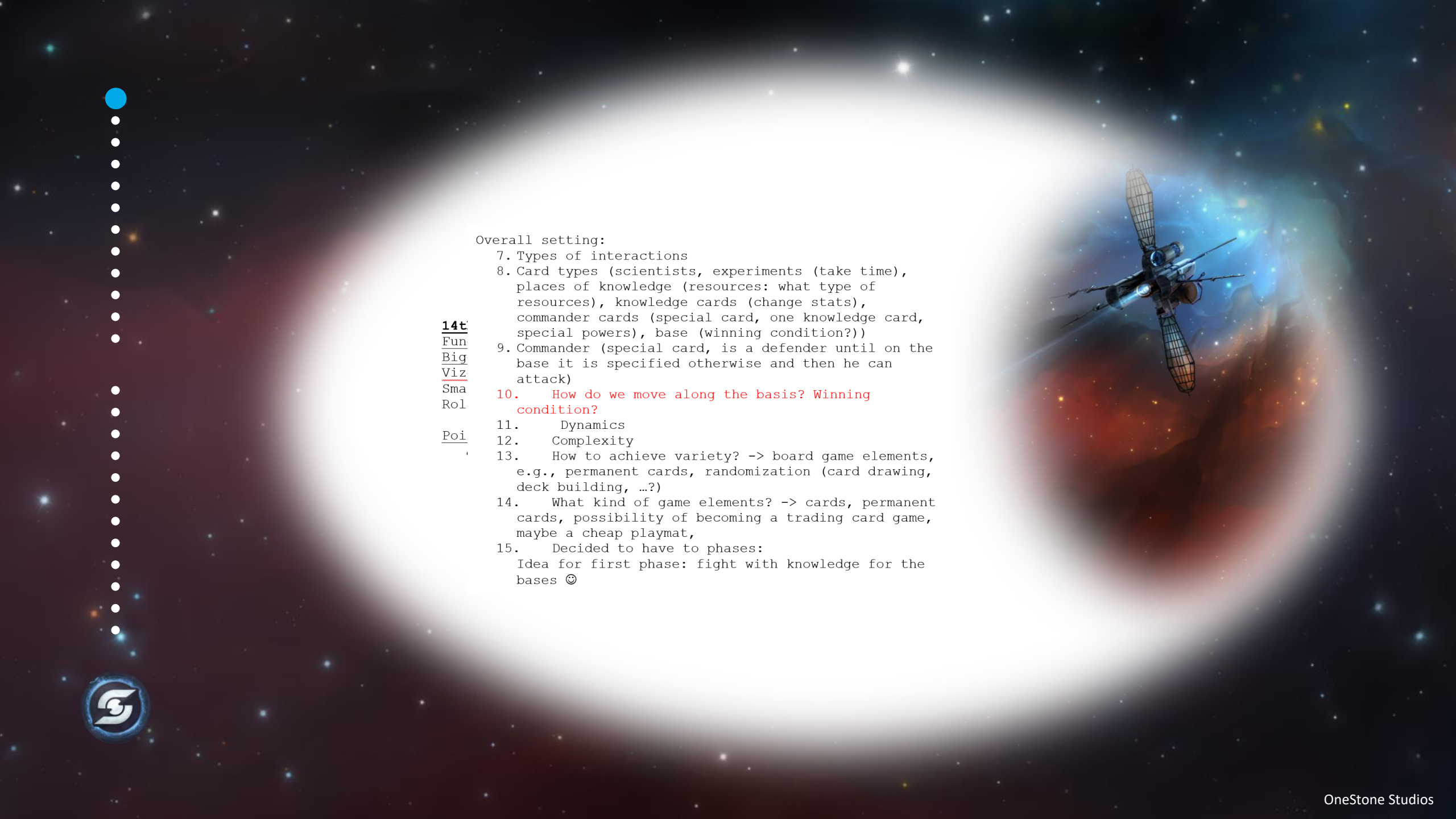
SEEKER CHRONICLES

Hendrik

Lea

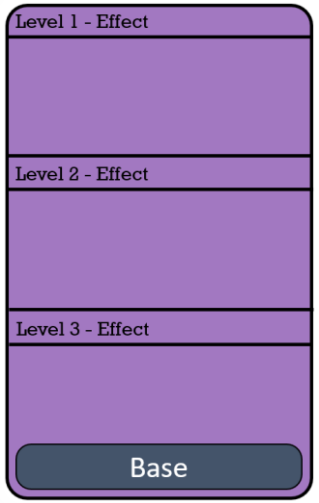
Mira

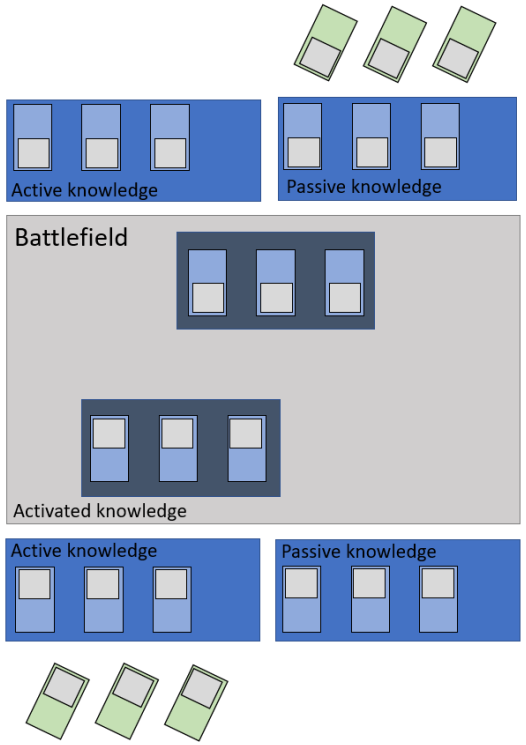
2020—21



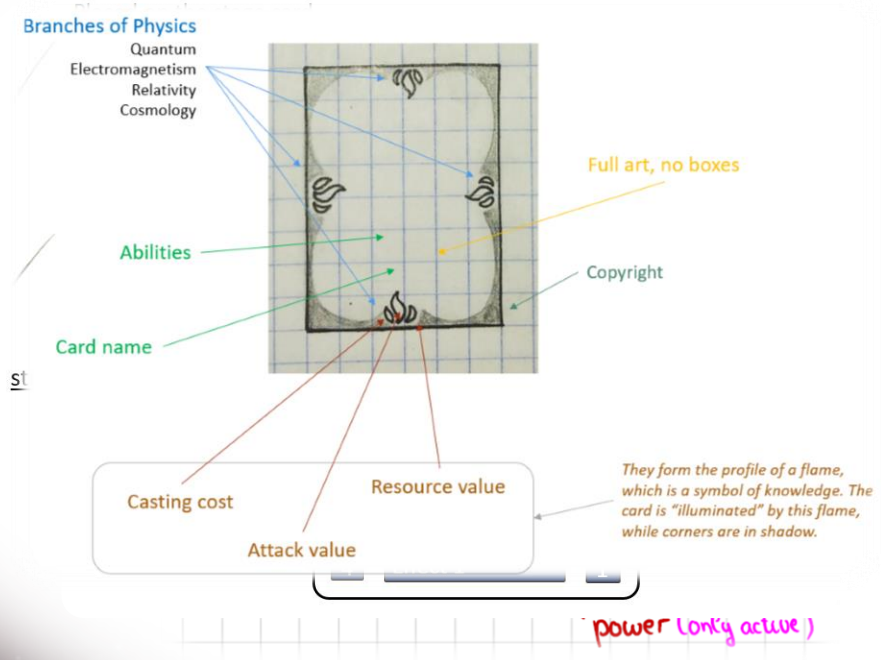
Overall setting:

7. Types of interactions
8. Card types (scientists, experiments (take time), places of knowledge (resources: what type of resources), knowledge cards (change stats), commander cards (special card, one knowledge card, special powers), base (winning condition?))
9. Commander (special card, is a defender until on the base it is specified otherwise and then he can attack)
10. How do we move along the basis? Winning condition?
11. Dynamics
12. Complexity
13. How to achieve variety? -> board game elements, e.g., permanent cards, randomization (card drawing, deck building, …?)
14. What kind of game elements? -> cards, permanent cards, possibility of becoming a trading card game, maybe a cheap playmat,
15. Decided to have to phases:
    Idea for first phase: fight with knowledge for the bases ☺


Level 1 - Effect
Level 2 - Effect
Level 3 - Effect
Base


Active knowledge
Passive knowledge
Battlefield
Activated knowledge
Active knowledge
Passive knowledge

Idea: Lead Scientist Card



Effects

Scientists:

- experimentalist → experiments cost less
- theorist → costs less to attach new knowledge
- teacher → knowledge token / cannot activate
- visionary → attach knowledge from your hand

Experiments:

- discovery → get knowledge card from stack to game (pay - get)
- predation → create knowledge tokens
  - → view opponents cards
  - → diminish opponents knowledge /-n / tap
  - → improve own knowledge /+n / untap
- industrial → activate a knowledge card
- verification → get knowledge card from stack to your hand

Knowledge:

(active):

- technology → always active
- broad → switch / split between channels with knowledge of same type
- symbiosis / pinnacle → increase power for each activated knowledge of same type under it
  - → applies to all channels with the same type

Dear **artist**,

We are a team of developers and scientists creating *Seeker*, a trading card game set in a post-apocalyptic world, where humans seek long forgotten knowledge to overcome the perils of their age. Unlike most fantastic settings, [illegible] entirely based on true scientific knowledge, such as [illegible] ~~rified by actual scientists~~. Our [illegible] people ~~more comfortable~~ [illegible] everywhere.

As [illegible] ~~ow, we~~ [illegible] ~~fond~~ [illegible]

As [illegible] our ~~financial~~ [illegible] ~~contract~~ [illegible]

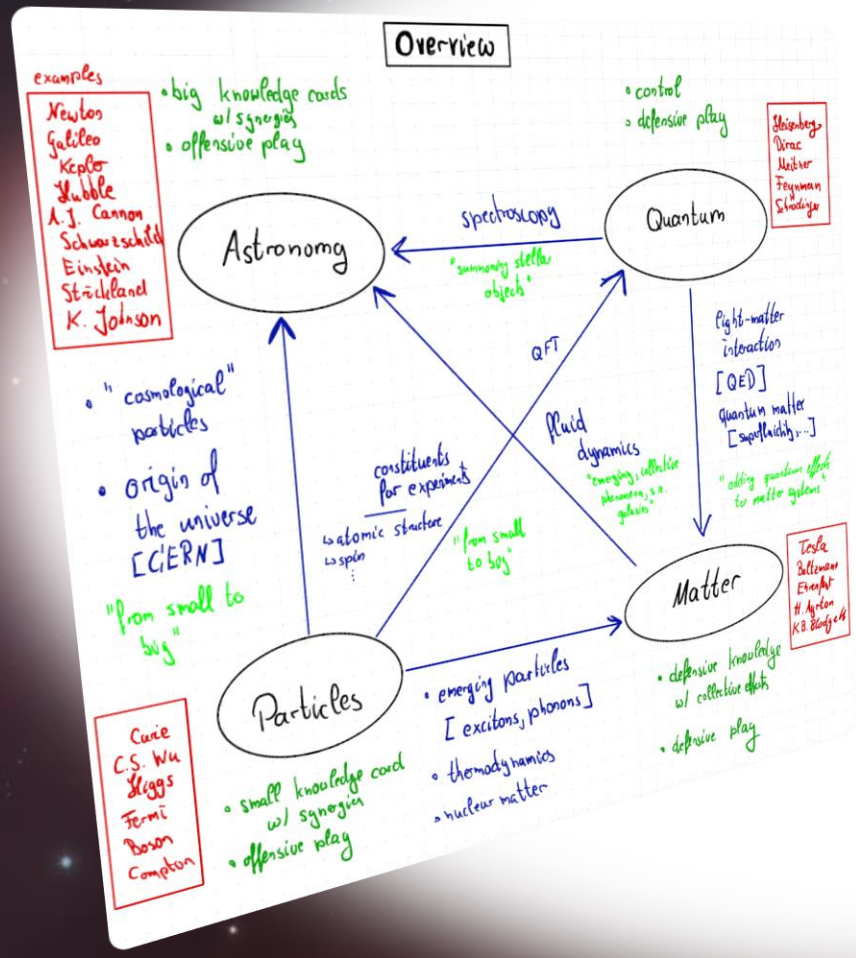
If you have any [illegible] happy also to arrange a skype/zoom, [illegible]

We would very much appreciate a response.

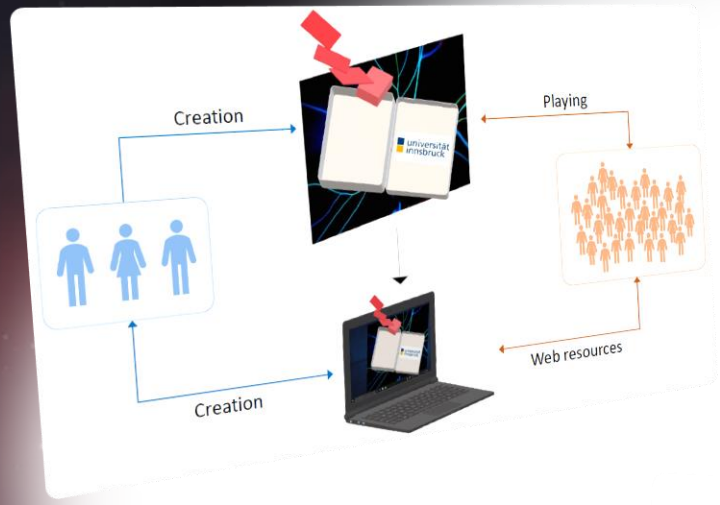
Best regards,

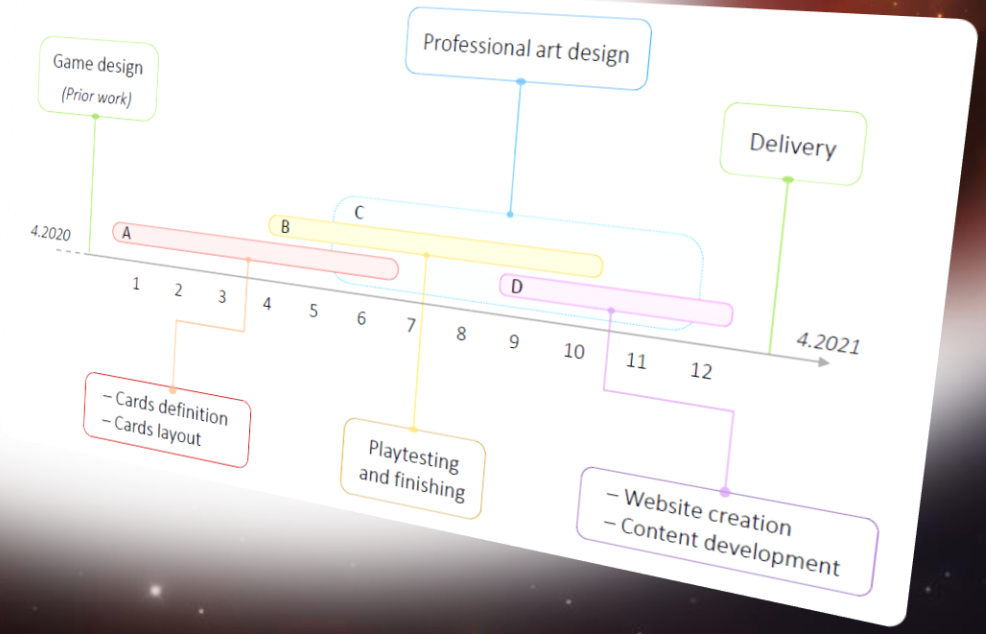
Dr. Dr. Dr.

OneStone Studios



Mechanics	Opponents: Cosmos	Opponents: Quantum	Opponents: Light	Opponents: Matter
Ramp	X			X
Deck manipulation		X	X	
Burn		X	X	
Interaction (target)		X		X
Interaction (global)	X		X	
Luck		X		


Creation
Playing
Creation
Web resources


Game design
(Prior work)
Professional art design
Delivery
4.2020
A
B
C
D
1
2
3
4
5
6
7
8
9
10
11
12
4.2021
– Cards definition
– Cards layout
Playtesting
and finishing
– Website creation
– Content development

Characteristic abilities

Confinement: Cannot clash alone.

Combine / Coalescence: Two cards become one, with total power given by the sum.

[Artist 1] (still a big fan but don't expect him to work for us)

Charge X: When a knowledge card interacts with another one that has *charge X*, it *fades away* until the end of the next turn unless its controller spends X resources to *remember* it.

https://www.artstation.com/artwork/JPXR0

Decay: Search your *memory* for a knowledge card that shares a knowledge type and has lower cost and *study* it.

https://www.artstation.com/artwork/299WA

Gravity: During the combat phase, for each channel, all knowledge cards must block an attacking card with *gravity*, if able.

Hack / Tunneling: Direct damage to a player.

https://www.artstation.com/artwork/JleA1z

Shatter: Forget the card to *Hack X*, where X is the knowledge power.

https://www.artstation.com/artwork/PZQNy

Entangled: (activated ability) What influences a card that is entangled happens to this card as well.

Wave: Can move across channels while clashing (a.k.a. it is in superpositiion).

Crystal: Cannot be targeted by abilities controlled by the opponent.

[Artist 2] (could work out)

Accretion X: Gains (+X) when [something happens].

https://www.artstation.com/artwork/Yn5n3

General abilities

https://www.artstation.com/artwork/OloOJ

Timely: Can activate and attack as it enters the battlefield.

https://www.artstation.com/artwork/mqw5V9

Robust / Reliable / Irrefutable: Cannot be targeted by spells of abilities controlled by the opponent.

Impact: Attacks in all channels at the same time.

Permanent: Does not count towards the limit of *memory*.

Alex Rommel (no portraits – I think this won't work)

Immense: No limit to the number of knowledge cards.

https://www.artstation.com/artwork/2xrqEa

Insight / Intuition / Analogy:

https://www.artstation.com/artwork/6axVqn

Elegant: All knowledge cards that share a type cost 1 less.

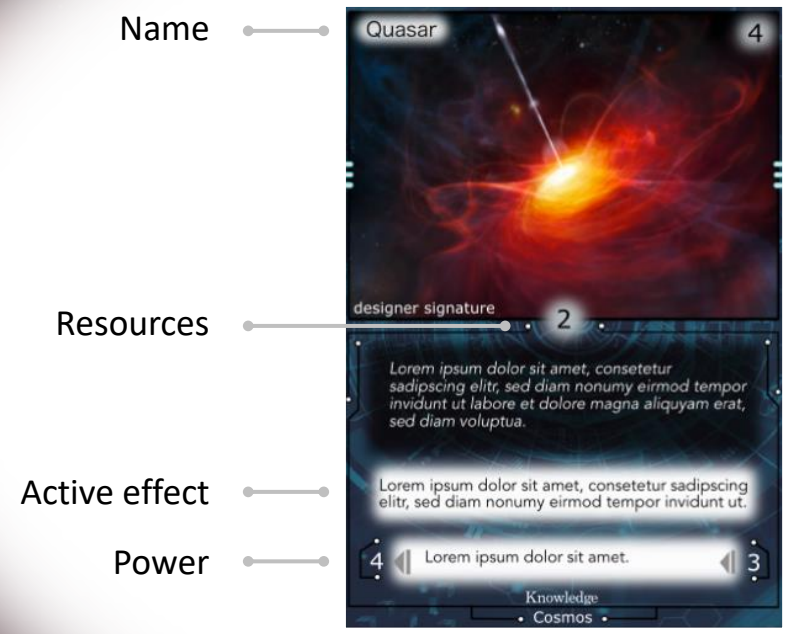
Milestone: ++Add counters until a condition is met --> *Delivery*.

https://www.artstation.com/artwork/G4ZXa

Inspiring X: When you play this card, you can play another card from your hand that shares a type reducing its cost by X.

Seminal / Breakthrough: When you play this card, search your memory for a card that shares a type and add it to your hand.

Vision X: When you play this card, look at the top X cards of your memory.



Name

Cost

Resources

Flavor text

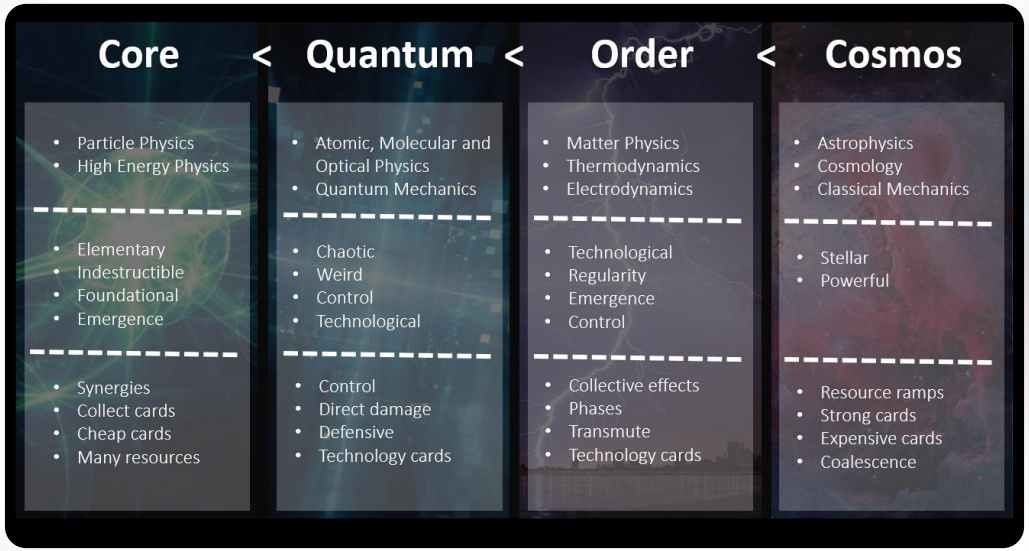
Active effect

Stream effect

Power

Activation cost

Field


Core < Quantum < Order < Cosmos
• Particle Physics
• High Energy Physics
• Elementary
• Indestructible
• Foundational
• Emergence
• Synergies
• Collect cards
• Cheap cards
• Many resources
• Atomic, Molecular and Optical Physics
• Quantum Mechanics
• Chaotic
• Weird
• Control
• Technological
• Control
• Direct damage
• Defensive
• Technology cards
• Matter Physics
• Thermodynamics
• Electrodynamics
• Technological
• Regularity
• Emergence
• Control
• Collective effects
• Phases
• Transmute
• Technology cards
• Astrophysics
• Cosmology
• Classical Mechanics
• Stellar
• Powerful
• Resource ramps
• Strong cards
• Expensive cards
• Coalescence

3. **Quantum speedup** (0)
   Add 1 resource for every *Quantum* knowledge card you control.

4. **Wave function collapse** (2)
   Target *Quantum* knowledge card you control gains "Outcome:
   - : Gains (+1) and *Wave* until the end of the turn.
   - : Decay, then each opponent forgets one knowledge card."

5. **Observer effect** (X)
   Search your memory for a *Quantum* card with cost less than X and reveal it. Outcome:
   - : If the revealed card is a scientist, put it onto the battlefield. All your *Quantum* cards lose all their abilities until the end of the turn.
   - : Otherwise, study it. You may add any number of knowledge cards to a scientist without paying its cost.

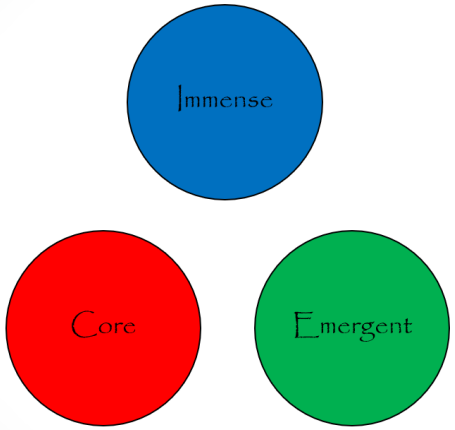
6. **Wave-particle duality** (2)
   Outcome:
   - All your *Quantum* cards gain *Wave* and *Tunnel* until the end of the turn.
   - Activate target *Quantum* card. It gains (+2) until the end of the turn.

7. **Copenhagen interpretation** (4)
   Vision 2. At the beginning of your turn, choose two between realism, determinism and locality:
   Realism: All knowledge cards gain (-1), *Crystal* and *Decay*
   Determinism: All knowledge cards gain (+1) and lose all abilities.
   Locality: Effects do not apply to knowledge cards owned by a different *Seeker*.

8. **Uncertainty principle** (4)
   All knowledge cards gain "Outcome:
   - This card loses all abilities and gains (+1)
   - This card gains *Wave*, *Tunnel* and *Entangled*."

9. **Path integral formulation** (5)
   X: Set aside any number of Quantum knowledge cards you control and open X channels. After the opponent declared blockers, randomly assign the set-aside cards clashing in these channels, then draw 1 card for each non-empty channel.

10. **Many worlds** (5)
    Each player chooses one knowledge card, then forgets all the others. Exchange control of the two cards.



Advantages with ‘3’ divisions:

1. (subjective) ‘3’ is an elegant number;
2. Easier to handle and richer for design;
3. Largely enhances deck-building;
4. Clear and intuitive separation;
5. Enables scalability to other disciplines;
6. Enables mixing within disciplines;

Scalability!

- We use [Notion] instead of [Knowledge card] when we refer to knowledge cards in play. Any other single-word, countable noun would do the job.
- The number of keyword abilities is reduced to 3+5, no more than 9.

Field-specific in physics

1. **Wave** : This notion spawns in the channel of a random pioneer, once blocks are declared.
2. **Emergence** : This notion can be used to conjure a scientist from your stack.
3. **Massive : –**

All expansions (colored entries = field-characteristic abilities that are not unique)

1. **Validated** : cannot be affected by effects controlled by the opponent.
2. **Breakthrough**: This notion can pioneer a new channel
3. **Obscure : –** This notion wipes one slot from the opponents' memory.
4. **Timely** can be played and activated any time an experiment could be played.

Hack : Directly hacks the opponent's firewall.

OneStone Studios

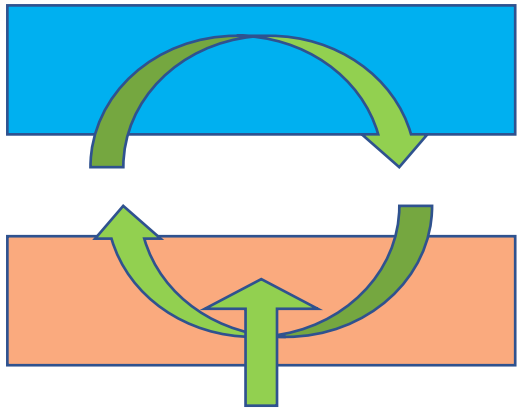
universität innsbruck

1669 Förderkreis Wissenschafft Gesellschaft

Engagement wirkt!

Sehr geehrte Damen und Herren!

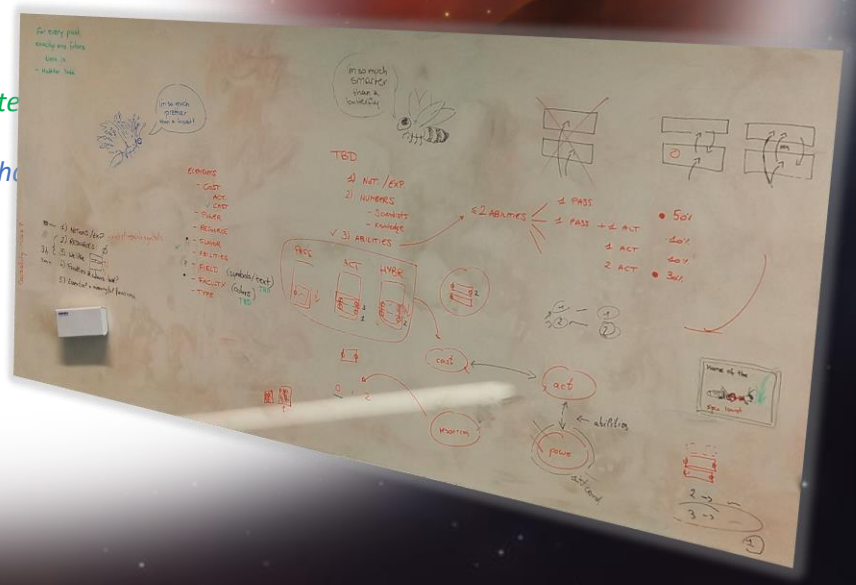
Ihr Projekt, Ihr Vorhaben, Ihre Idee hat Anklang bei Förderinnen und Förderern von **1669 – Wissen**schafft Gesell**schaft** gefunden. Es freut uns sehr, dass Sie NutznießerInnen von deren Engagement für die Universität Innsbruck sind und Ihr Vorhaben dank deren Spenden nun starten und umsetzen können. Dazu gratulieren wir Ihnen sehr herzlich!

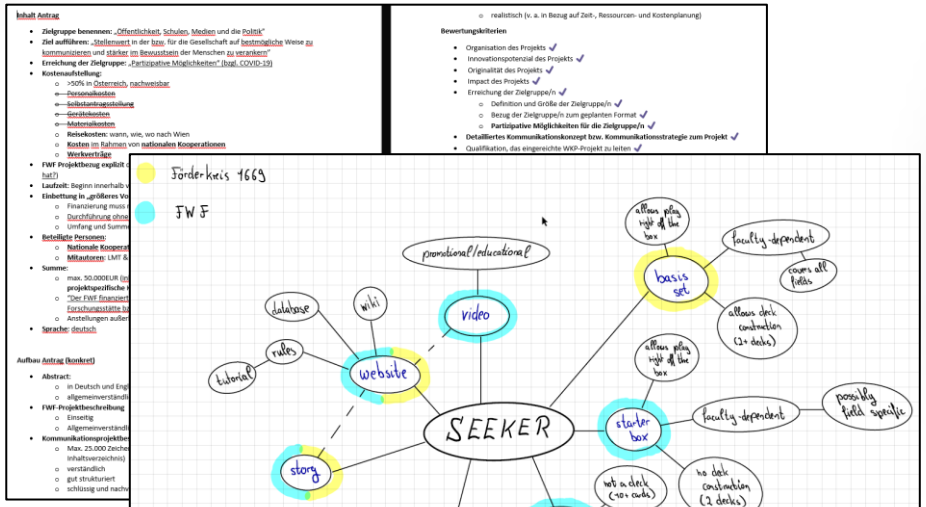


ACTIVE

PASSIVE

[Quarks]
Cost: 0
Resource: 1
1 -- *Obscure* (*Deactivate one notion. [This notion] cannot be deactivate*
2 -- *Breakthrough (This notion pioneers a new channel).* 2
3 -- *Duality (Flip a quantum coin. If you win, set it aside and all your ch*





Inhalt Antrag

- **Zielgruppe benennen:** „Öffentlichkeit, Schulen, Medien und die Politik"
- **Ziel aufführen:** „Stellenwert in der bzw. für die Gesellschaft auf bestmögliche Weise zu kommunizieren und stärker im Bewusstsein der Menschen zu verankern"
- **Erreichung der Zielgruppe:** „Partizipative Möglichkeiten" (bzgl. COVID-19)
- **Kostenaufstellung:**
  - >50% in Österreich, nachweisbar
  - ~~Personalkosten~~
  - ~~Selbstanfragestellung~~
  - ~~Gerätekosten~~
  - ~~Materialkosten~~
  - **Reisekosten:** wann, wie, wo nach Wien
  - **Kosten** im Rahmen von **nationalen Kooperationen**
  - **Werkverträge**
- **FWF Projektbezug explizit**
- **Laufzeit:** Beginn innerhalb
- **Einbettung in „größeres Vo**
  - Finanzierung muss
  - Durchführung ohne
  - Umfang und Summ
- **Beteiligte Personen:**
  - **Nationale Kooperat**
  - **Mitautoren:** LMT &
- **Summe:**
  - max. 50.000EUR
  - **projektspezifische**
  - "Der FWF finanziert
  - Anstellungen außer
- **Sprache:** deutsch

Aufbau Antrag (konkret)

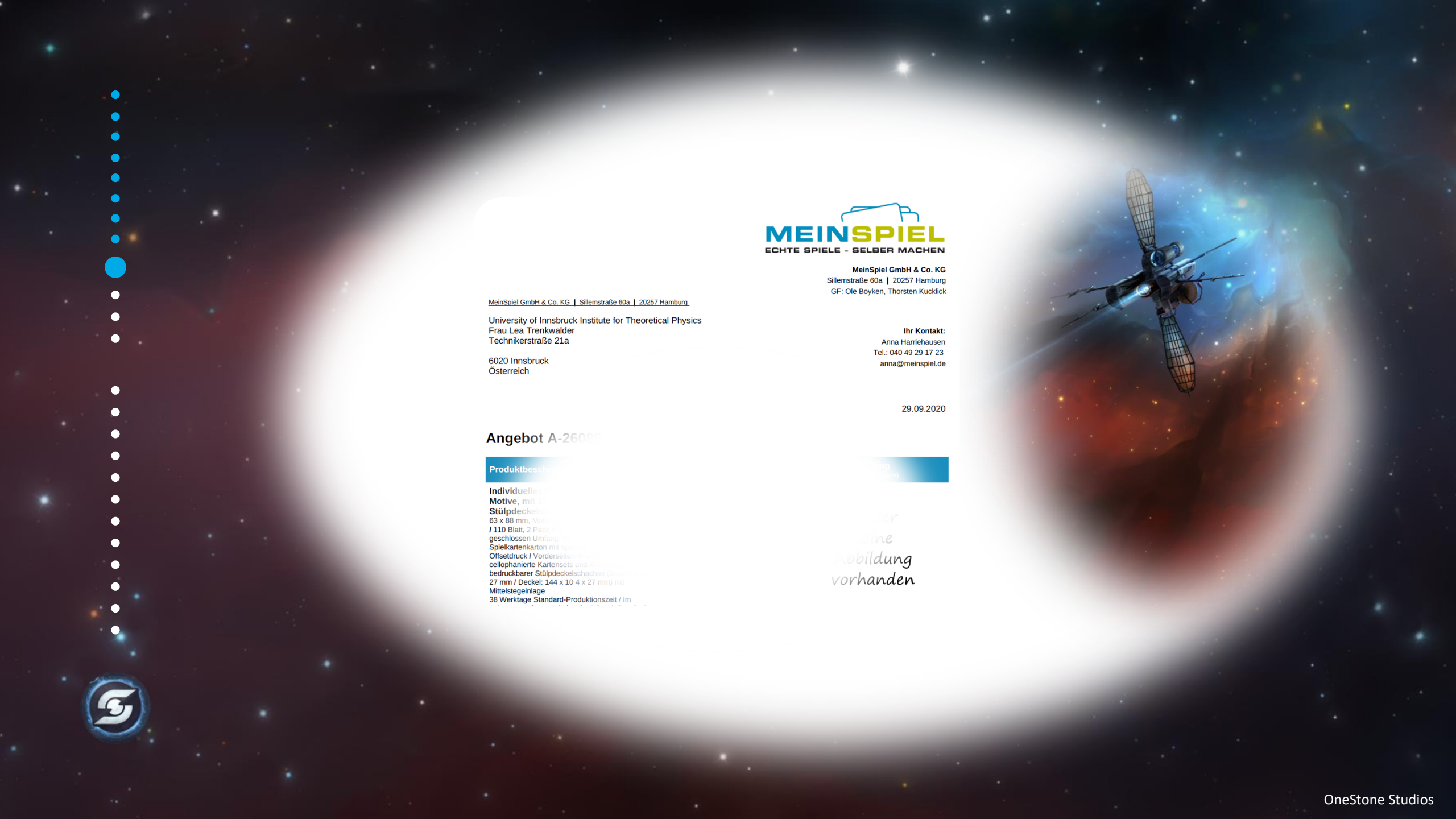
- **Abstract:**
  - in Deutsch und Engl
  - allgemeinverständl
- **FWF-Projektbeschreibung**
  - Einseitig
  - Allgemeinverständl
- **Kommunikationsprojektbe**
  - Max. 25.000 Zeiche
    Inhaltsverzeichnis)
  - verständlich
  - gut strukturiert
  - schlüssig und nach

- realistisch (v. a. in Bezug auf Zeit-, Ressourcen- und Kostenplanung)

Bewertungskriterien

- Organisation des Projekts ✓
- Innovationspotenzial des Projekts ✓
- Originalität des Projekts ✓
- Impact des Projekts ✓
- Erreichung der Zielgruppe/n ✓
  - Definition und Größe der Zielgruppe/n ✓
  - Bezug der Zielgruppe/n zum geplanten Format ✓
  - **Partizipative Möglichkeiten für die Zielgruppe/n** ✓
- **Detailliertes Kommunikationskonzept bzw. Kommunikationsstrategie zum Projekt** ✓
- Qualifikation, das eingereichte WKP-Projekt zu leiten ✓

OneStone Studios



MEINSPIEL
ECHTE SPIELE - SELBER MACHEN

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Anna Harriehausen
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anna@meinspiel.de

29.09.2020

Angebot A-260

Produktbeschr

Individuelle
Motive, mit
Stülpdeckel
63 x 88 mm, Mot
/ 110 Blatt, 2 Pack
geschlossen Umfang
Spielkartenkarton mit
Offsetdruck / Vorderseiten
cellophanierte Kartensets und
bedruckbarer Stülpdeckelschachtel
27 mm / Deckel: 144 x 10 4 x 27 mm) mit
Mittelstegeinlage
38 Werktage Standard-Produktionszeit / Im

ine
bildung
vorhanden

OneStone Studios

KNOWLEDGE SCIENTISTS

ACTIVE and MIXED

1. **Johnson, the Unerring**
   Flavor: *"Men don't pay attention to small things." – K. Johnson*
   -- Notions and technologies in a channel you own gain +1. –

   1. [Photons]
      Cost: 0
      Channels with two or more notions gain +1.
      3 – Duality – 2

   2. [Gluon]
      Cost: 0
      Channels with two or more notions gain +1.
      1 – This channel gains +1 for each other notion you own. – 1

2. **Rubin, the Guiding Light**
   Flavor: *"Still more mysteries of the universe remain hidden. Their discovery awaits the adventurous scientists of the future. I like it this way." – V. Rubin*
   -- Look at the top 3 cards of all stacks, then set any of these cards aside. --

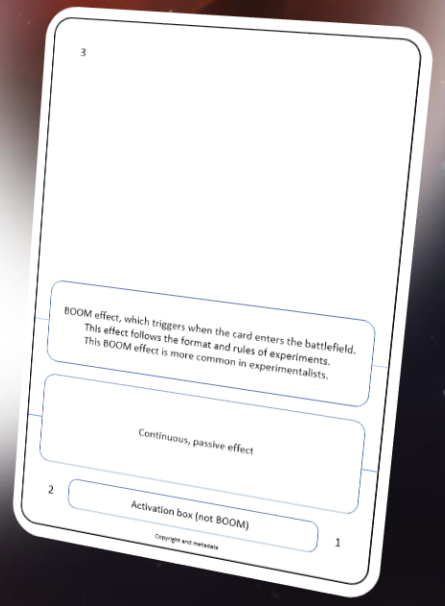
   3. [Quarks]
      Cost: 0
      2 – Duality – 1
      3 – ? – 3

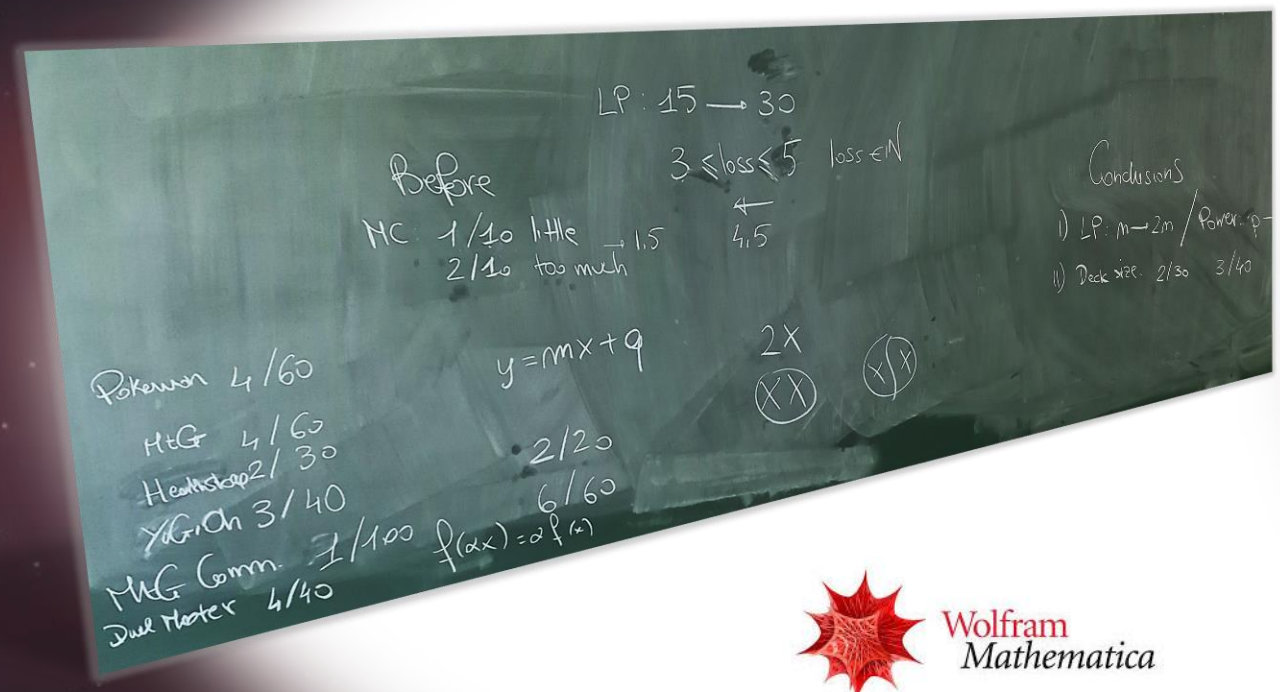
3. **Newton, the Giant**
   Flavor: *"We build too many walls and not enough bridges." – I. Newton*
   -- Deactivate and gain control of one notion. --

   4. [Quasiparticle] (Order)
      Cost: 0
      1 -- Duality -- 0
      2 – Obscure – 1

4. **Hawking, the Visionary**
   Flavor*: "If you understand the universe, you control it." – S. Hawking*
   -- Deactivate up to two notions _. --

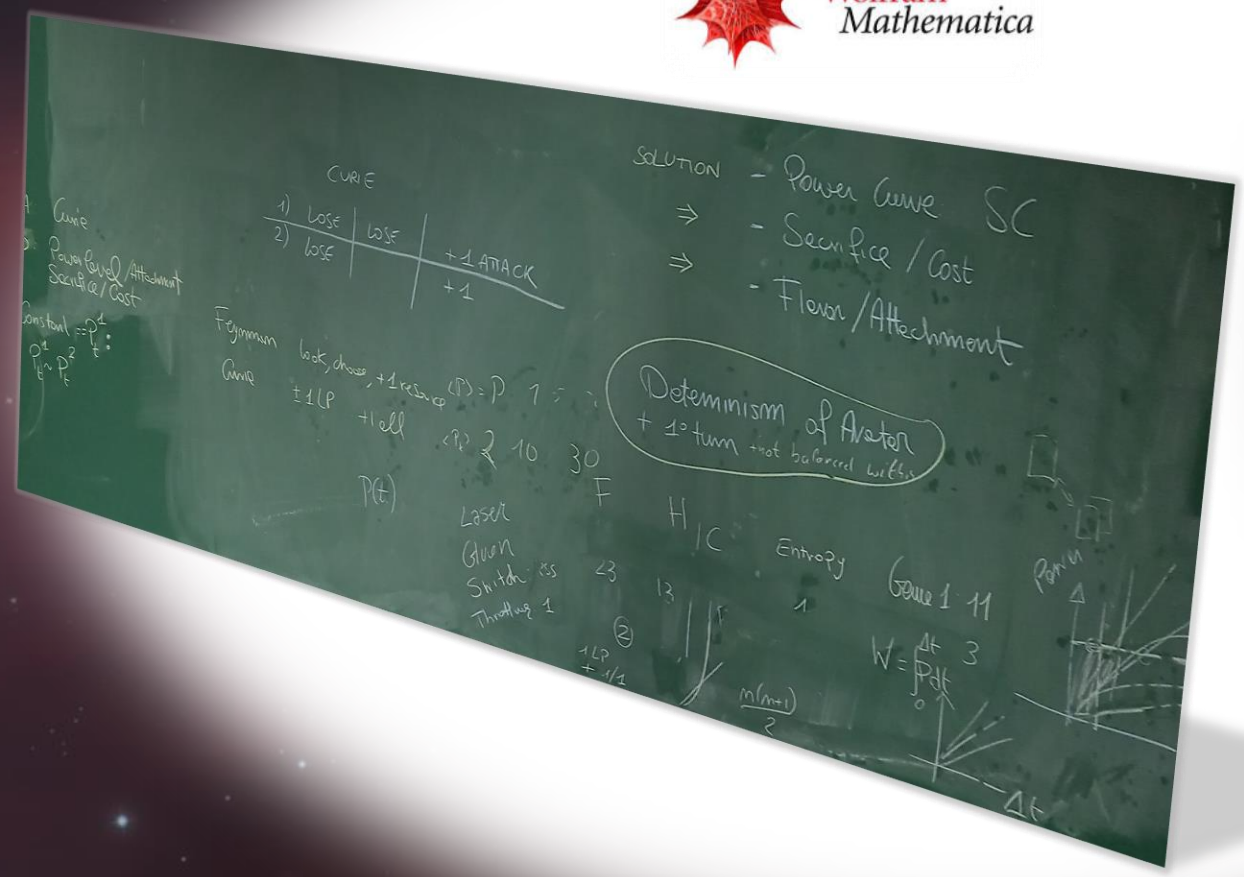
   5. [Strong Interaction]
      Cost: 0
      0 – [This card] can only be activated in a channel with two or more notions. – 2



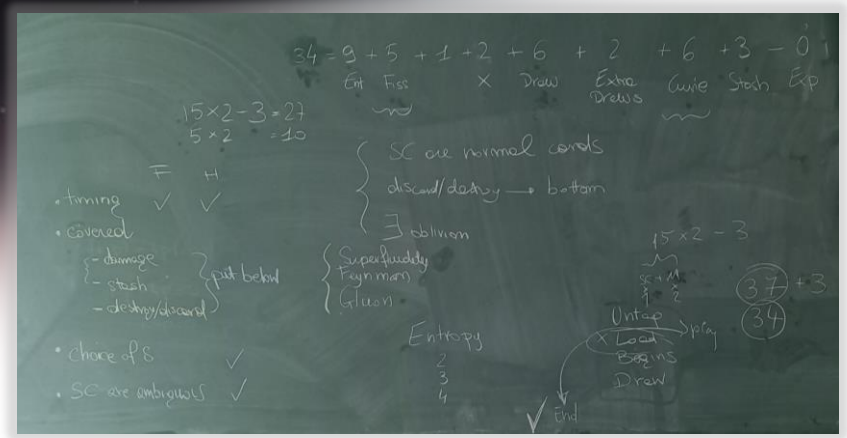


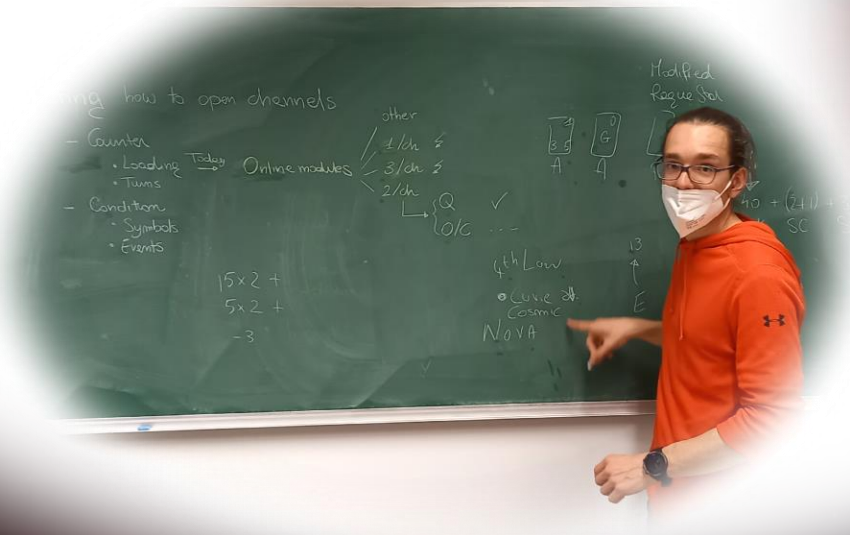
Wolfram Mathematica

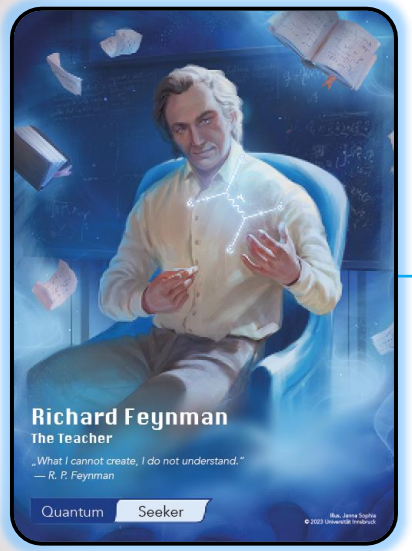
OneStone Studios



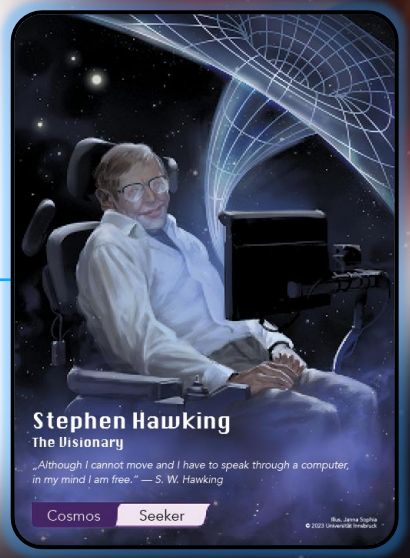
OneStone Studios


34 = 9 + 5 + 1 + 2 + 6 + 2 + 6 + 3 − 0
Ent Fiss × Draw Extra Draws Curie Stash Exp
15×2−3=27
5×2 =10
F H
• timing ✓ ✓
• covered
- damage
- stash
- destroy/discard
put behind
Superfluidity
Feynmann
Gluon
SC are normal cards
discard/destroy → bottom
∃ oblivion
Entropy
2
3
4
• choice of 8
• SC are ambiguous ✓
15×2−3
37 +3
34
Untap
Draw
Local
Begins
Draw
End

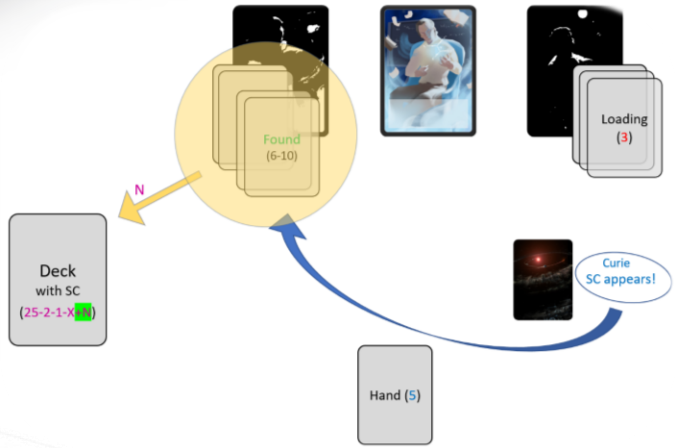

how to open channels
Counter
• Loading
• Turns
Online modules
Today
other
1/ch
3/ch
2/ch
Q
LOC
Modified
Rogue Stat
Conditions
• Symbols
• Events
15×2 +
5×2 +
−3
4th Low
Curie
Cosmic
NOVA


Richard Feynman
The Teacher
„What I cannot create, I do not understand."
— R. P. Feynman
Quantum
Seeker

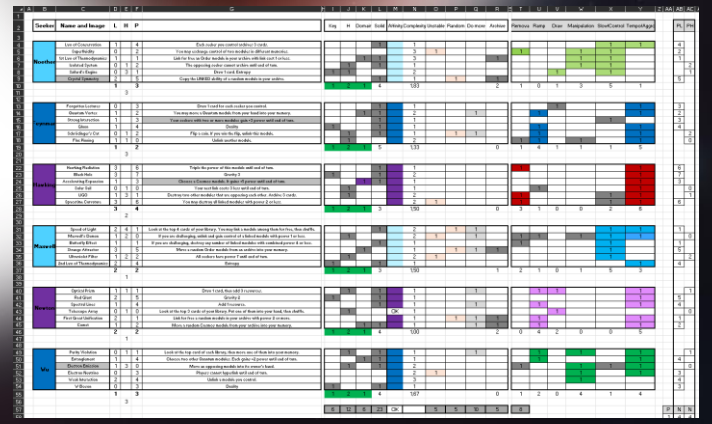
Chien-Shiung Wu
The First Lady
„A glimpse of this wonder can be the reward of a lifetime."
— C.-S. Wu
Quantum
Seeker


Stephen Hawking
The Visionary
„Although I cannot move and I have to speak through a computer, in my mind I am free." — S. W. Hawking
Cosmos
Seeker

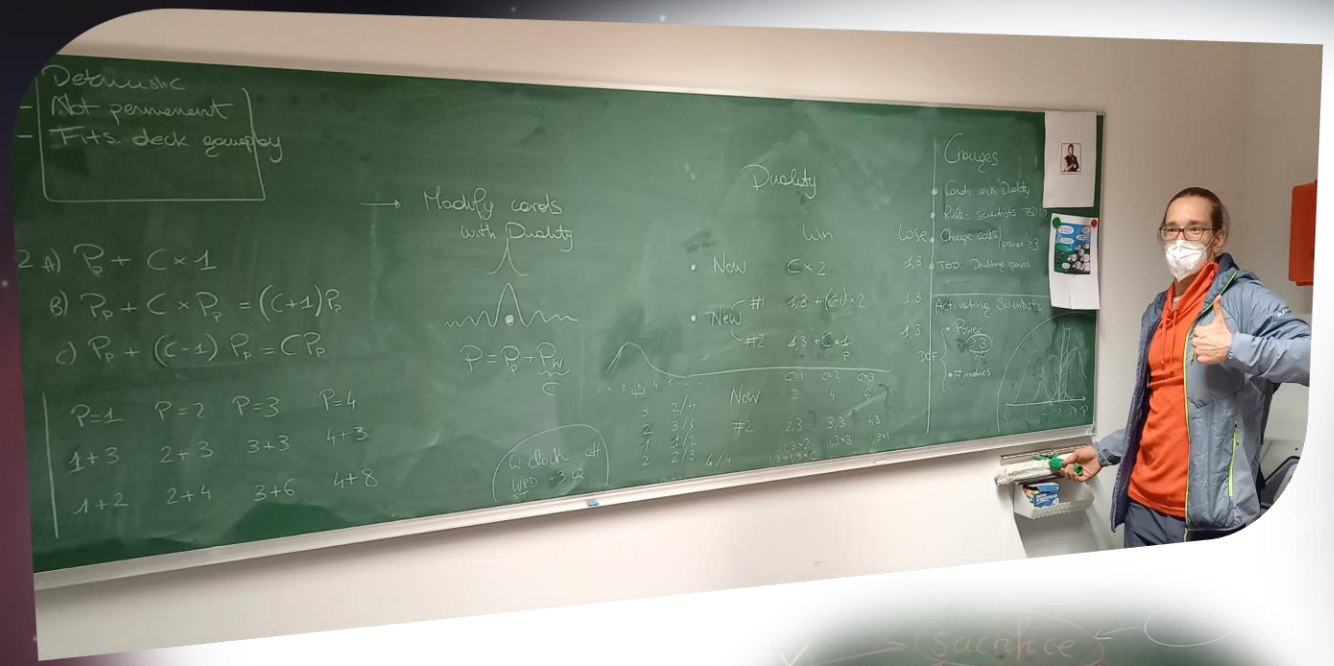
OneStone Studios

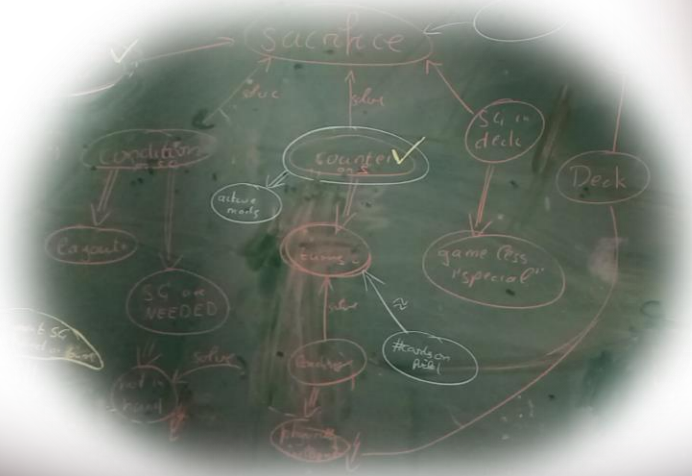


2023

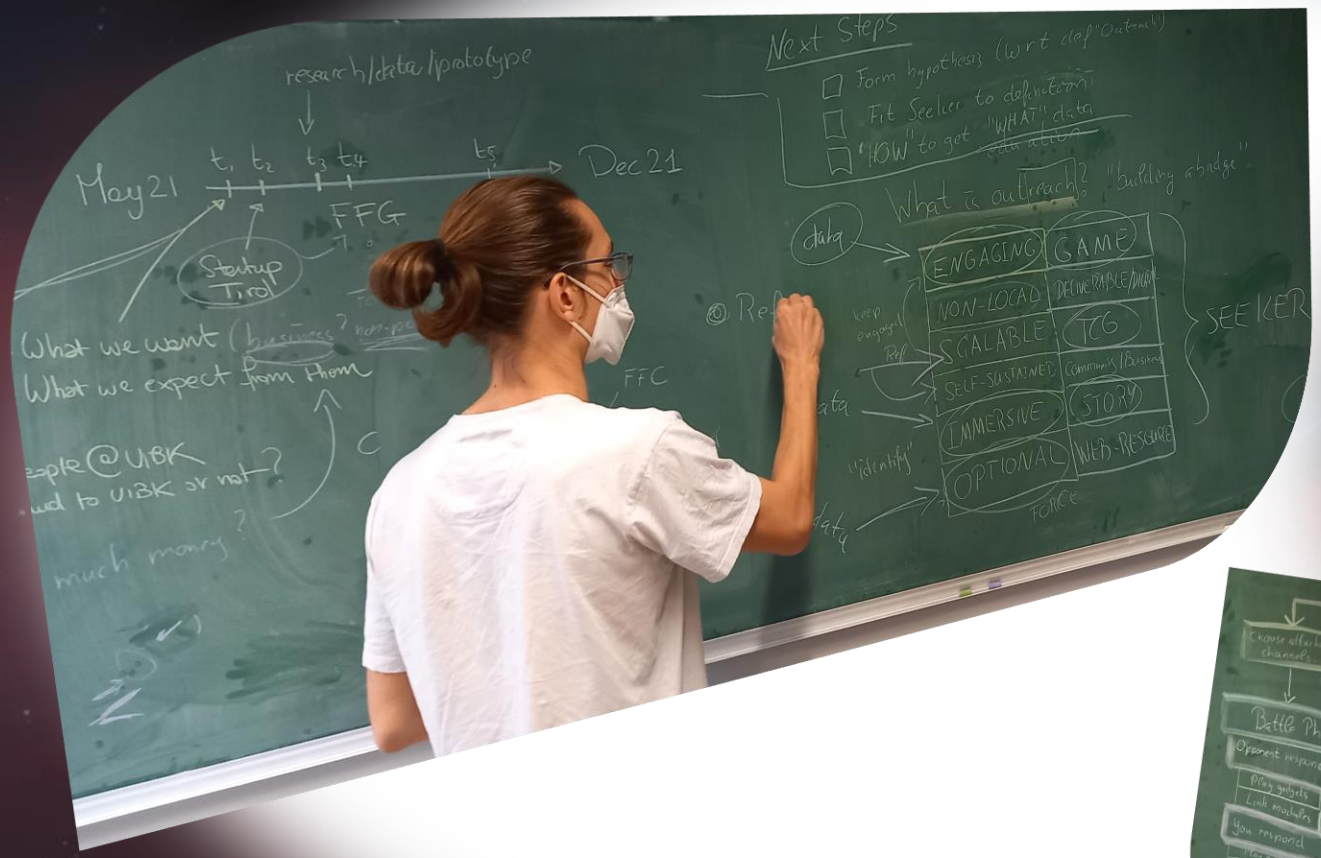


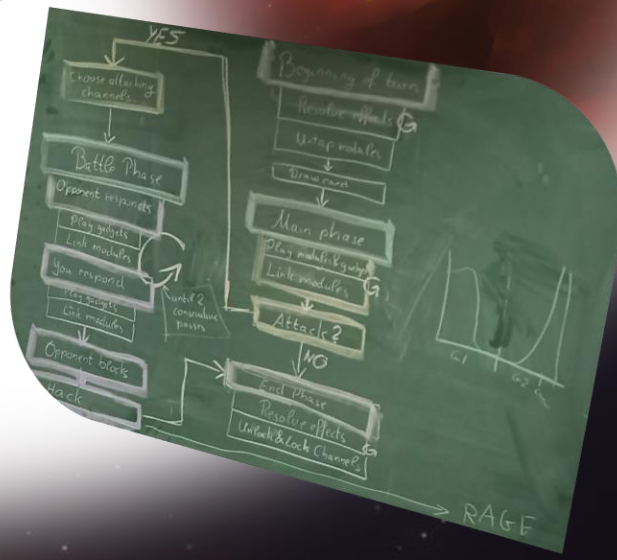
OneStone Studios





OneStone Studios

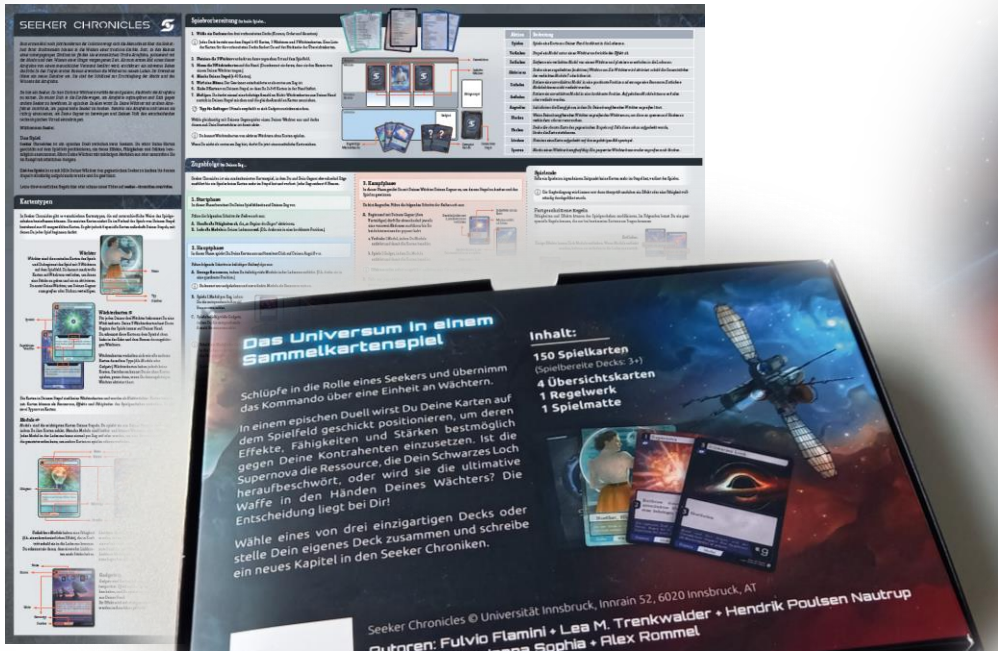


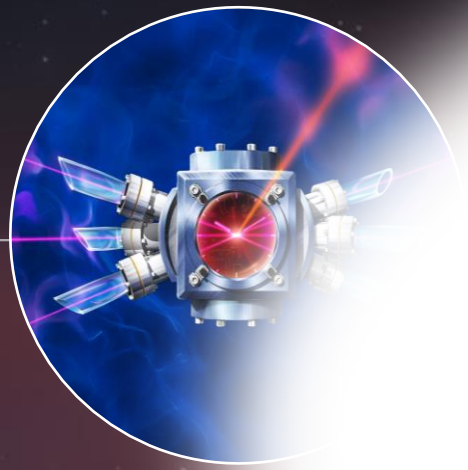


OneStone Studios

E
- Background Pattern 04 – DARK
- Logo 03 - UPDATED
- Light Effects 04

H1
- Background Pattern 04 – LIGHT ALTERNATIVE
- Logo 03 – OLD
- Light Effects 04


SEEKER CHRONICLES
Das Universum in einem Sammelkartenspiel
Schlüpfe in die Rolle eines Seekers und übernimm das Kommando über eine Einheit an Wächtern.
In einem epischen Duell wirst Du Deine Karten auf dem Spielfeld geschickt positionieren, um deren Effekte, Fähigkeiten und Stärken bestmöglich gegen Deine Kontrahenten einzusetzen. Ist die Supernova die Ressource, die Dein Schwarzes Loch heraufbeschwört, oder wird sie die ultimative Waffe in den Händen Deines Wächters? Die Entscheidung liegt bei Dir!
Wähle eines von drei einzigartigen Decks oder stelle Dein eigenes Deck zusammen und schreibe ein neues Kapitel in den Seeker Chroniken.
Inhalt:
150 Spielkarten
(Spielbereite Decks: 3+)
4 Übersichtskarten
1 Regelwerk
1 Spielmatte
Seeker Chronicles © Universität Innsbruck, Innrain 52, 6020 Innsbruck, AT
Autoren: Fulvio Flamini + Lea M. Trenkwalder + Hendrik Poulsen Nautrup
Illustrationen: Janna Sophia + Alex Rommel



OneStone Studios

Co-designed since 2020

universität innsbruck
Förderkreis 1669

universität innsbruck
Forschungsschwerpunkt Physik

Atoms, Light, and Molecules
Innsbruck Physics Research Center

FWF
Der Wissenschaftsfonds.

universität wien

OneStone Studios

Official pre-release in 2023

SPIEL Essen 2023

Local tournaments

Seeker Chronicles

The Universe in a Card Game

www.seeker-chronicles.com

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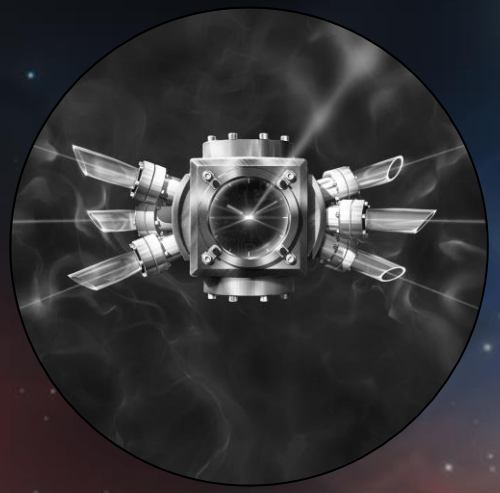
Backup slides



Studies

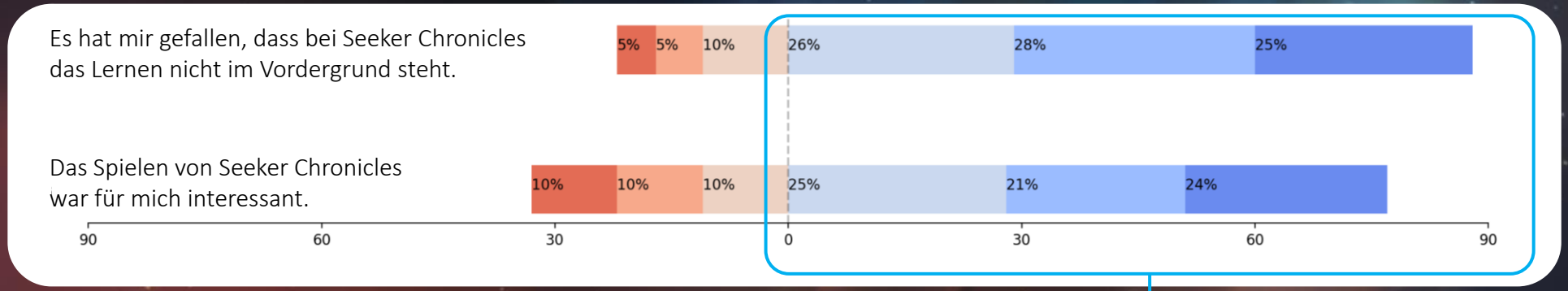
1st intervention study with schools in Austria

Main questions:

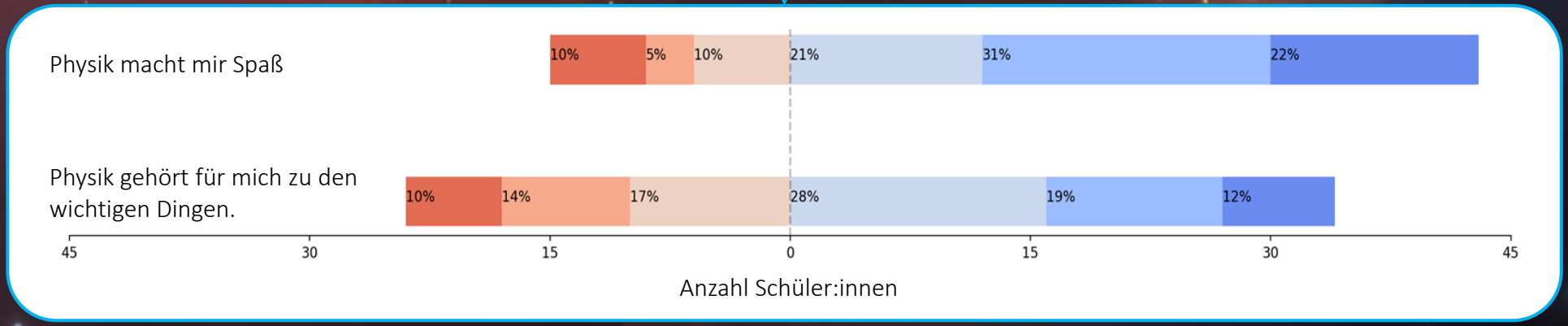
1. Does playing SC spark interest in physics?
2. Does playing SC motivate players to look up the content of the game? Where?
3. Does the student's predisposition influence the motivation to play the game?
   (Highly achieving students, gamers, MINT interest, gender)
4. To whom is the setting of the game more appealing?

1st intervention study: results

Interesse am Spiel



Interesse an Physik vorausgesetzt Interesse am Spiel



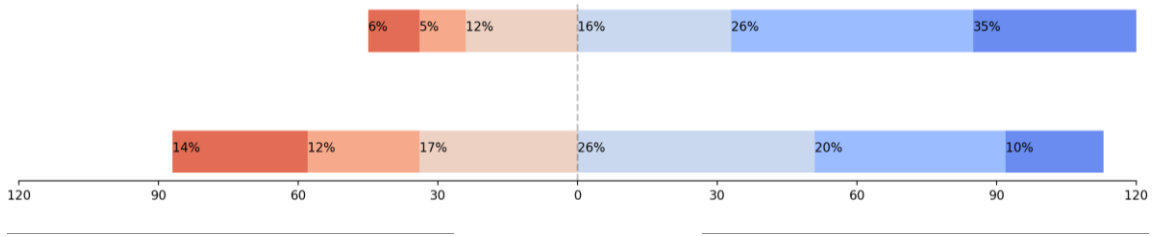
- Stimmt gar nicht
- Stimmt nicht
- Stimmt kaum
- Stimmt etwas
- Stimmt
- Stimmt völlig

1st intervention study: results

Interesse an Inhalten

Dass die Inhalte von S.C. Ideen aus der Physik darstellen hat mir gefallen.

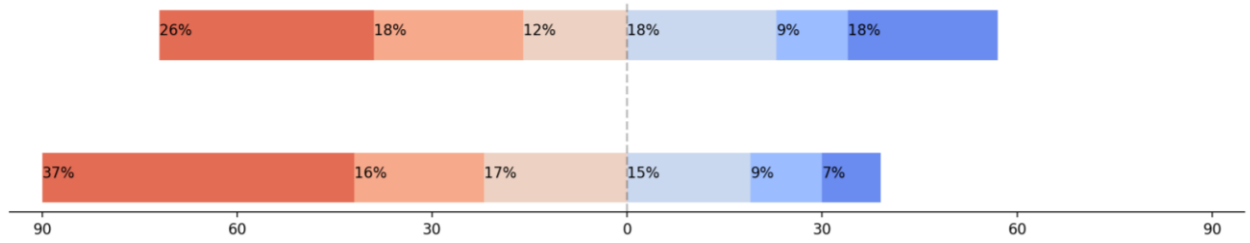
Das Lesen von Informationen über Physik-inhalte von S.C. war für mich interessant.



Intention zu Inhalten

Ich werde mit Freund:innen, Eltern oder Geschwistern über das Spiel S.C. reden.

Ich werde im Internet oder in Büchern mehr Informationen über die Physik im Spiel S.C. anschauen.



Anzahl Schüler:innen

- Stimmt gar nicht
- Stimmt nicht
- Stimmt kaum
- Stimmt etwas
- Stimmt
- Stimmt völlig

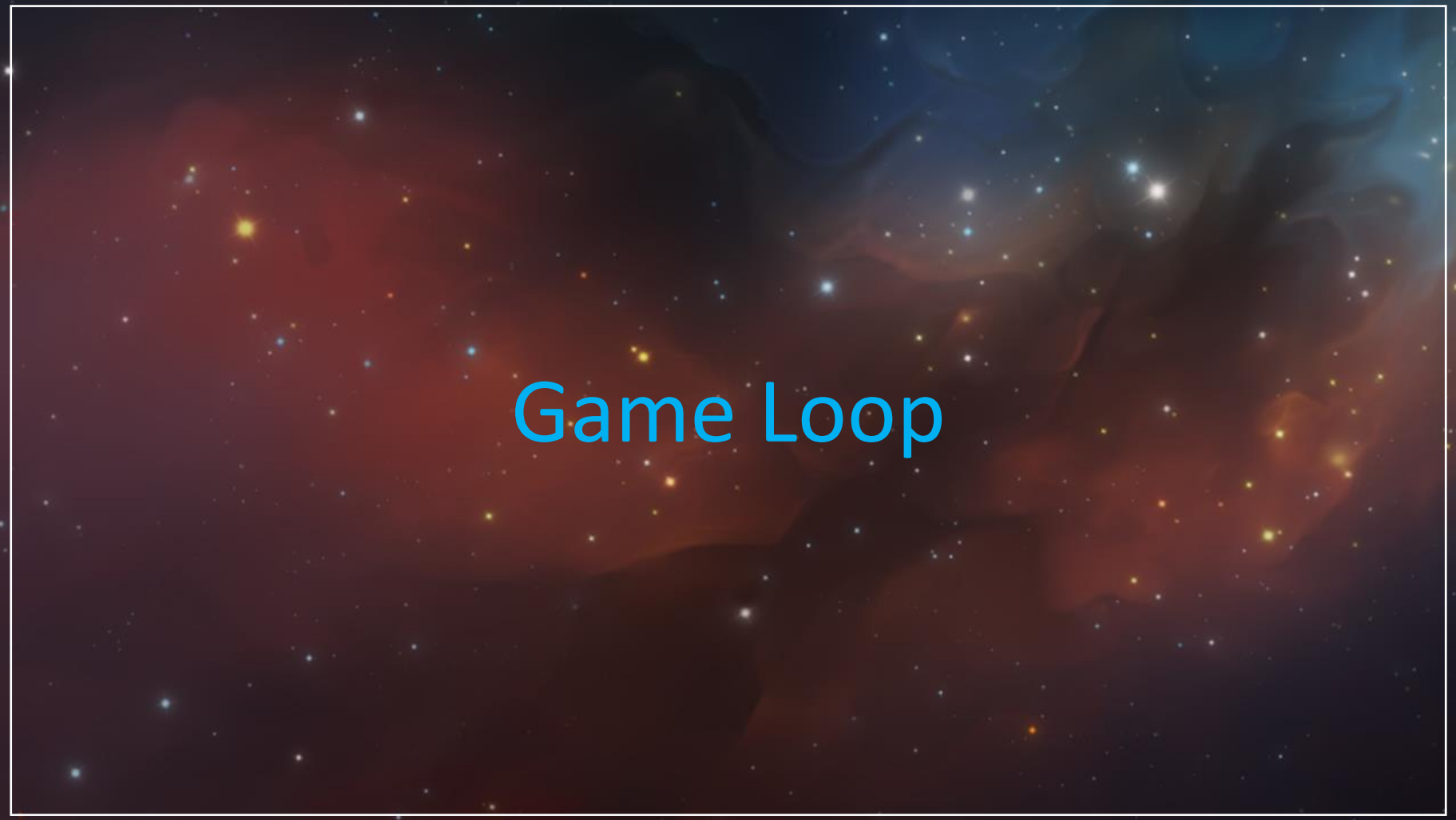
Gameplay

MOBA-type card game

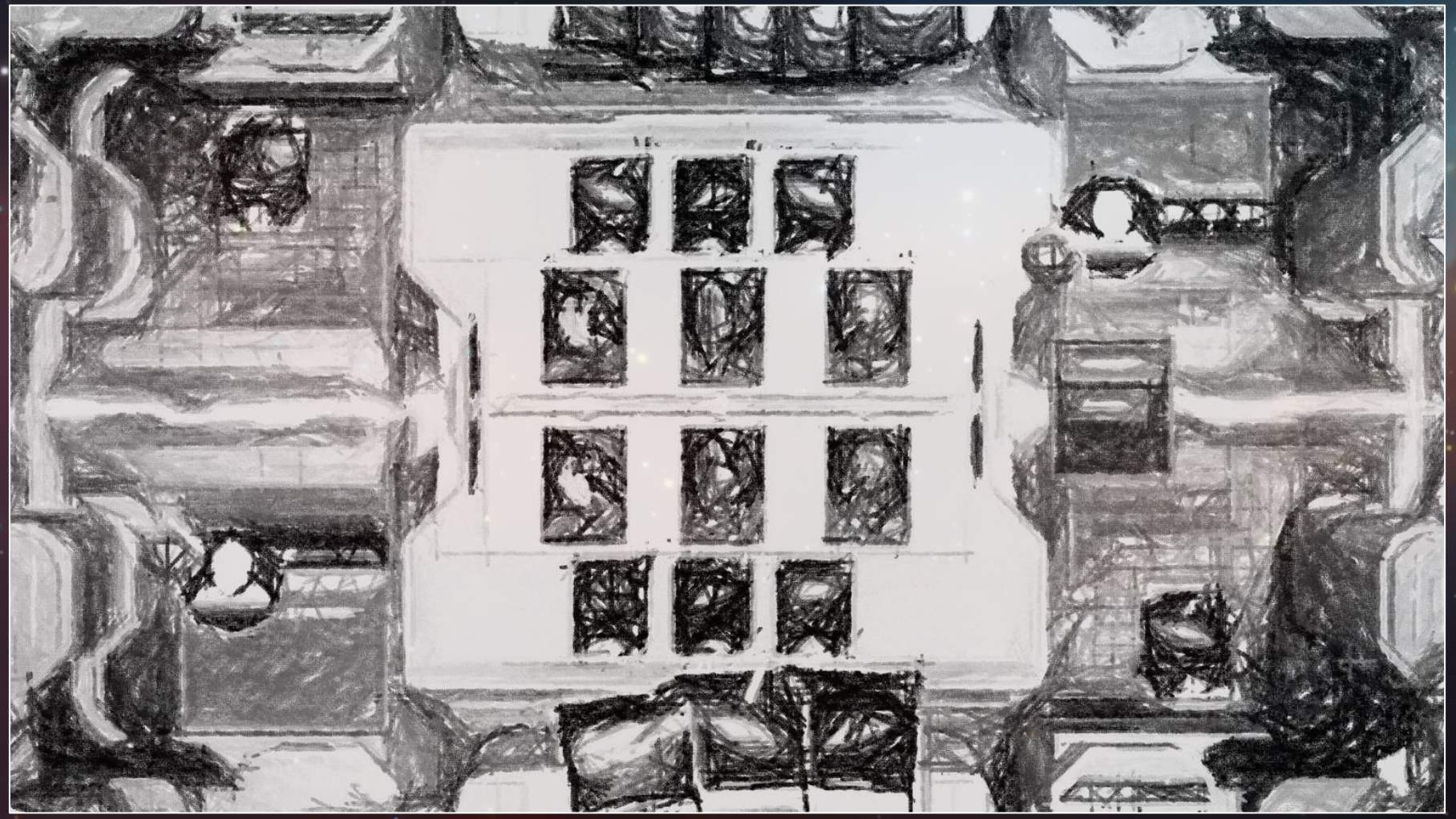
Choose your Seekers!

Combine 3 out of many Seekers to build you deck.
Each Seeker comes with their own unique set of cards.

Seeker Chronicles



Seeker Chronicles

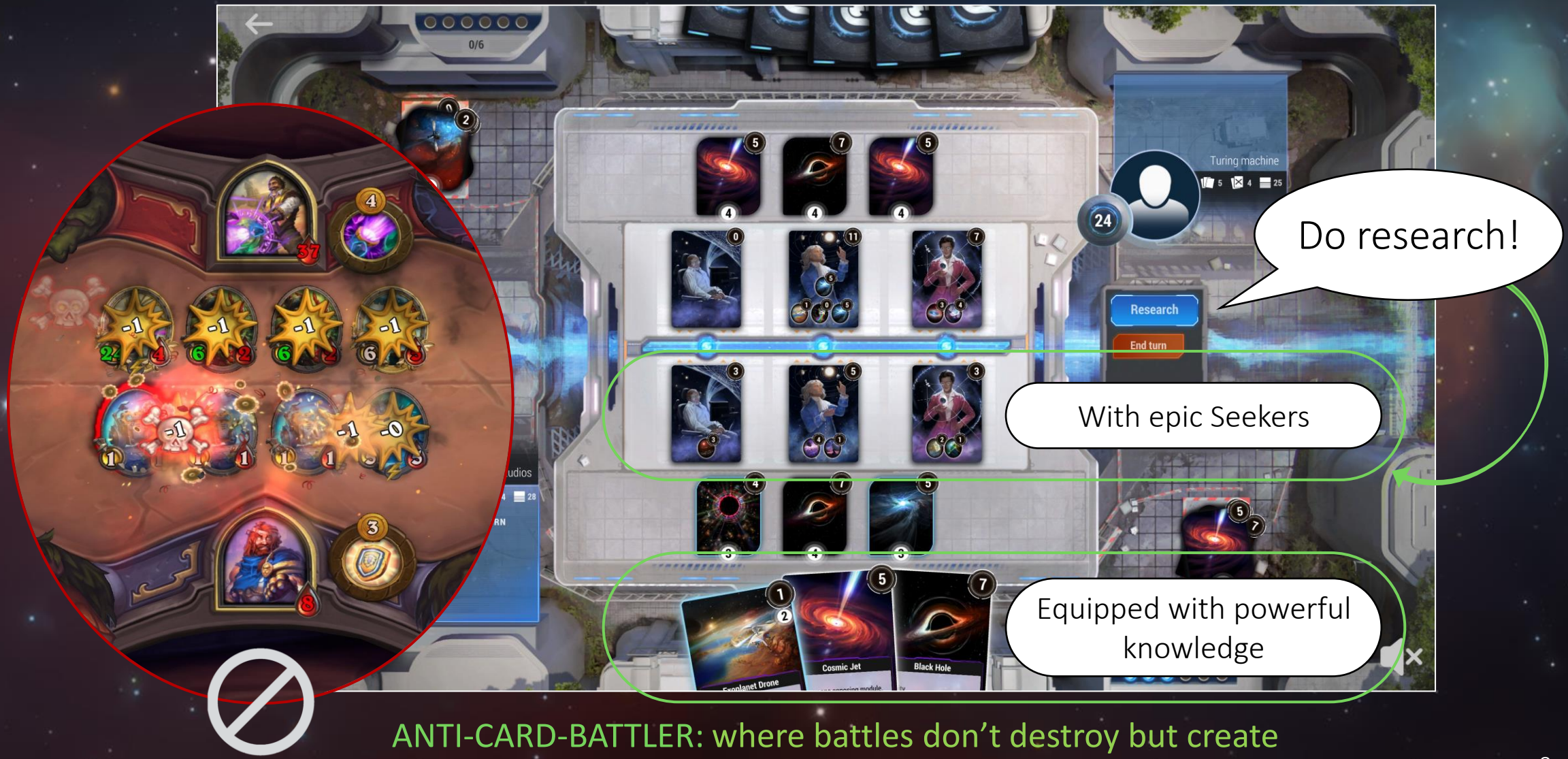


GAME CONCEPT

Seeker Chronicles

WORKING PROTOTYPE

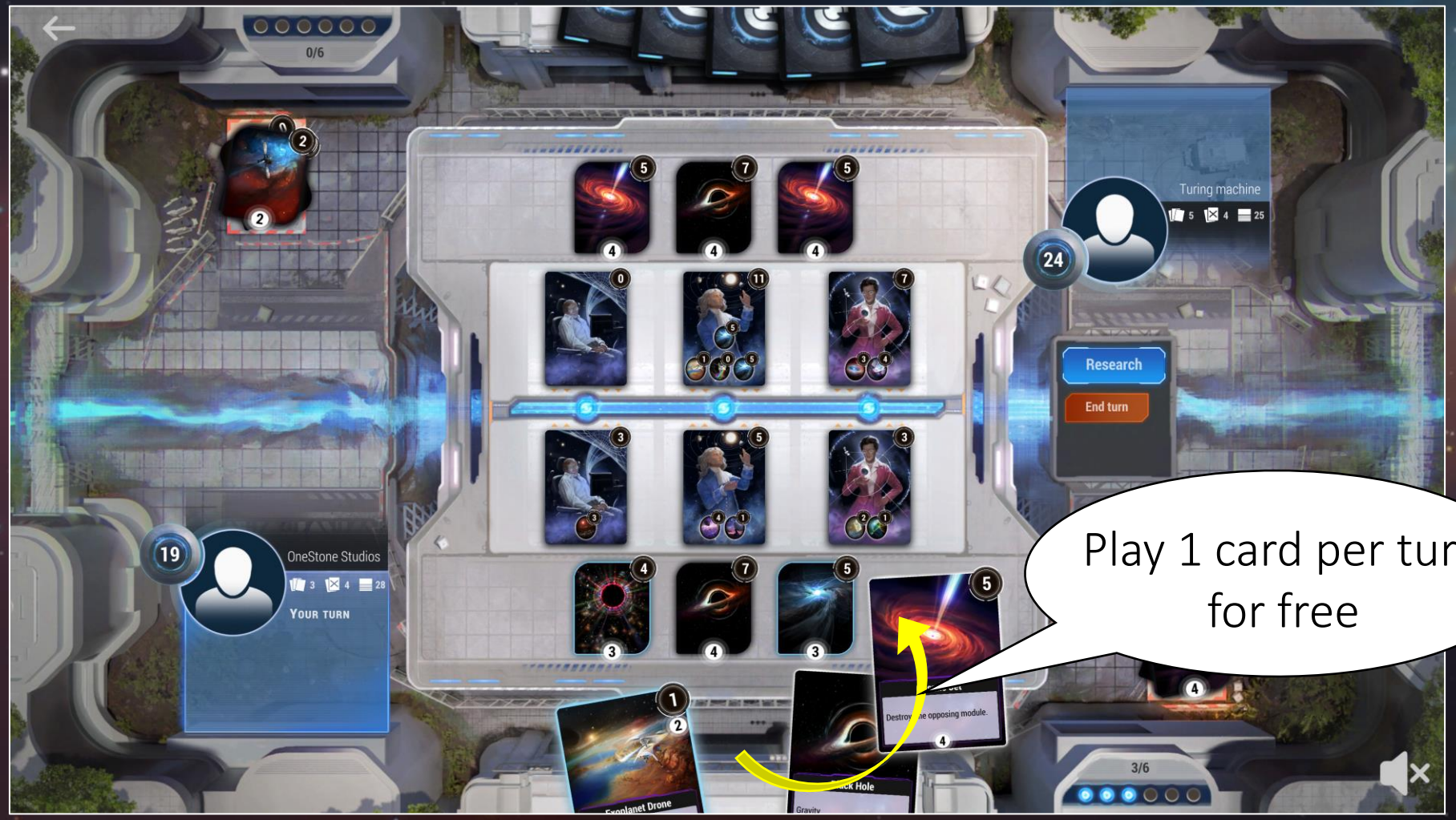
Seeker Chronicles



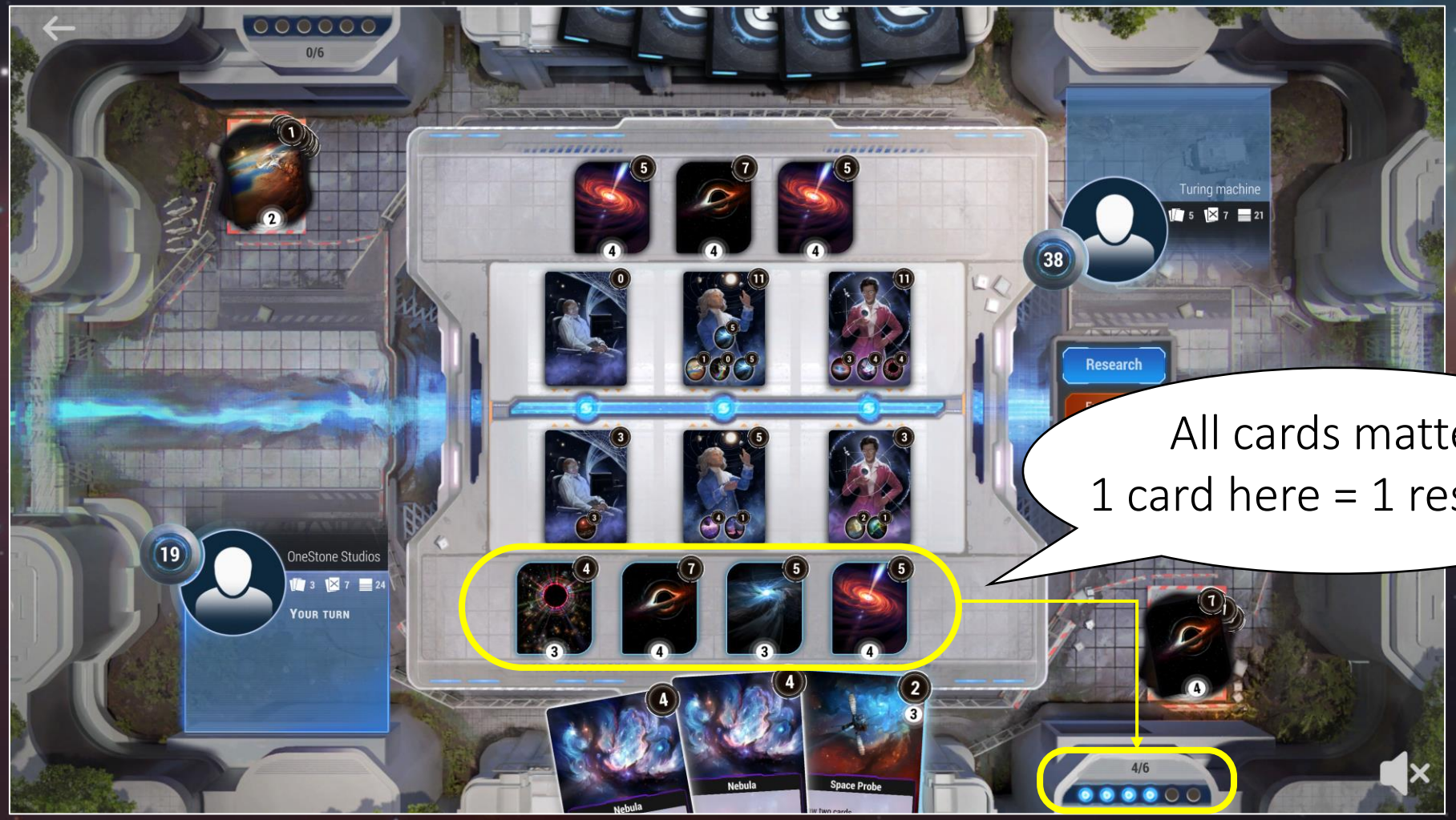
ANTI-CARD-BATTLER: where battles don’t destroy but create

OneStone Studios

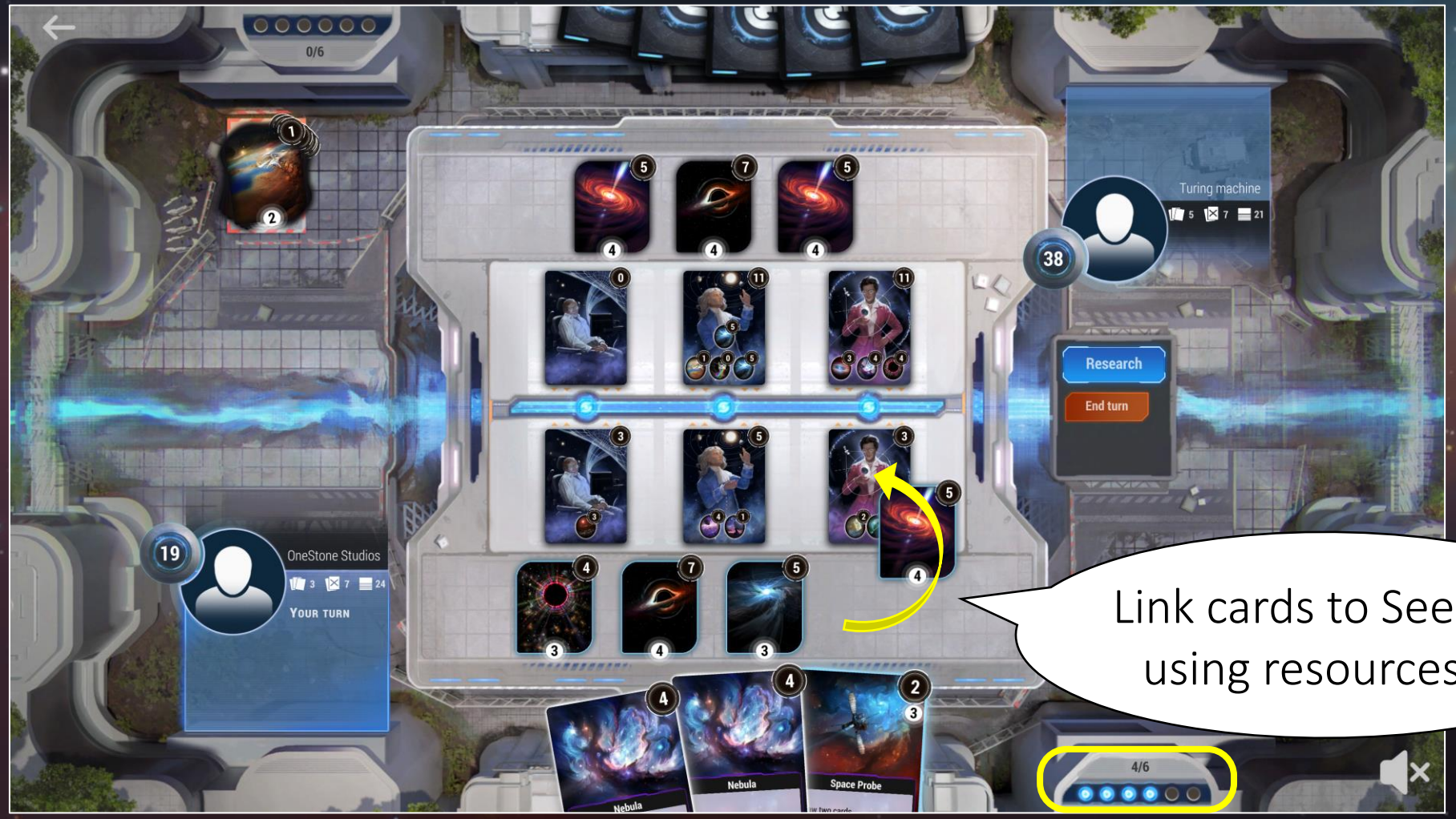
Seeker Chronicles



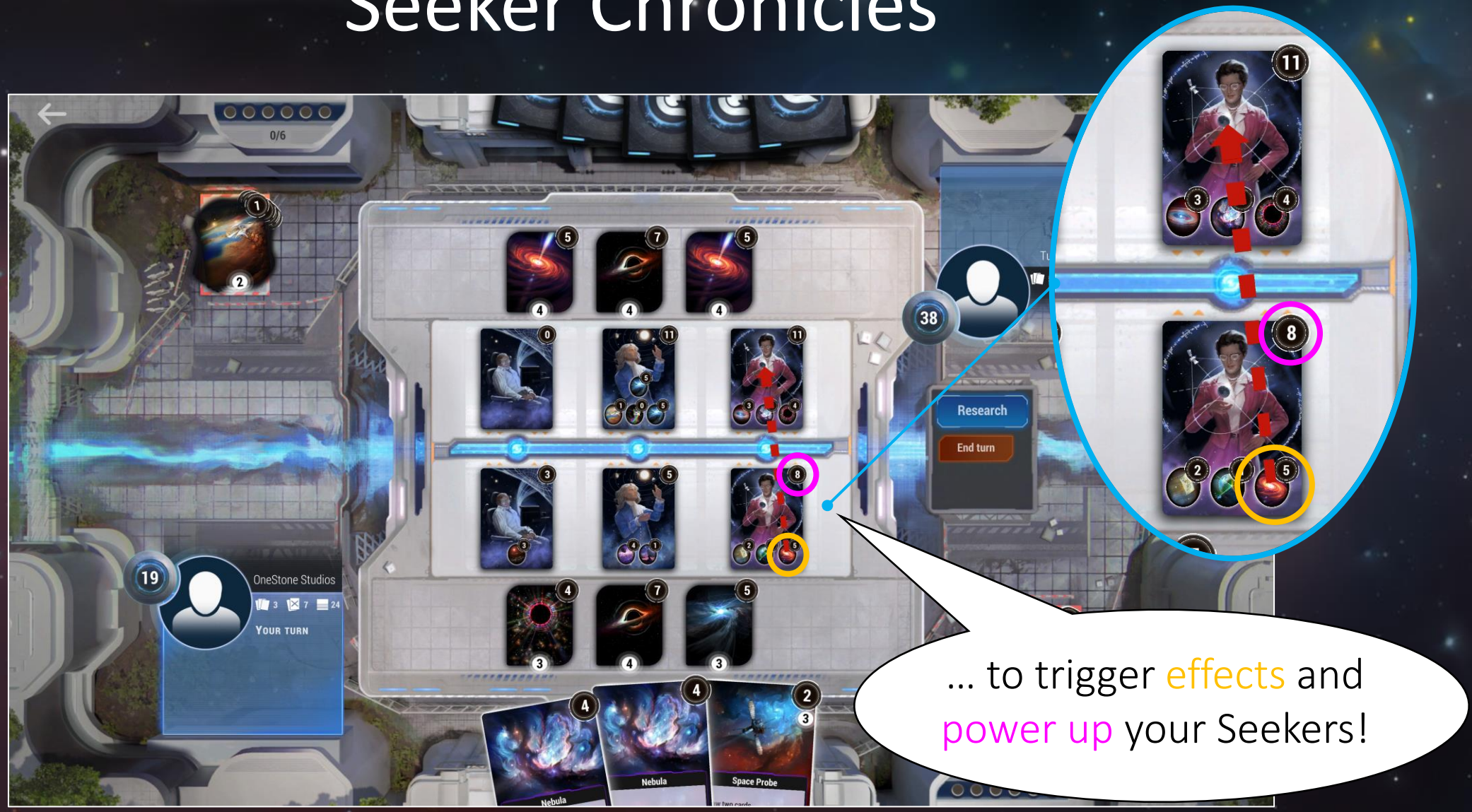
Seeker Chronicles



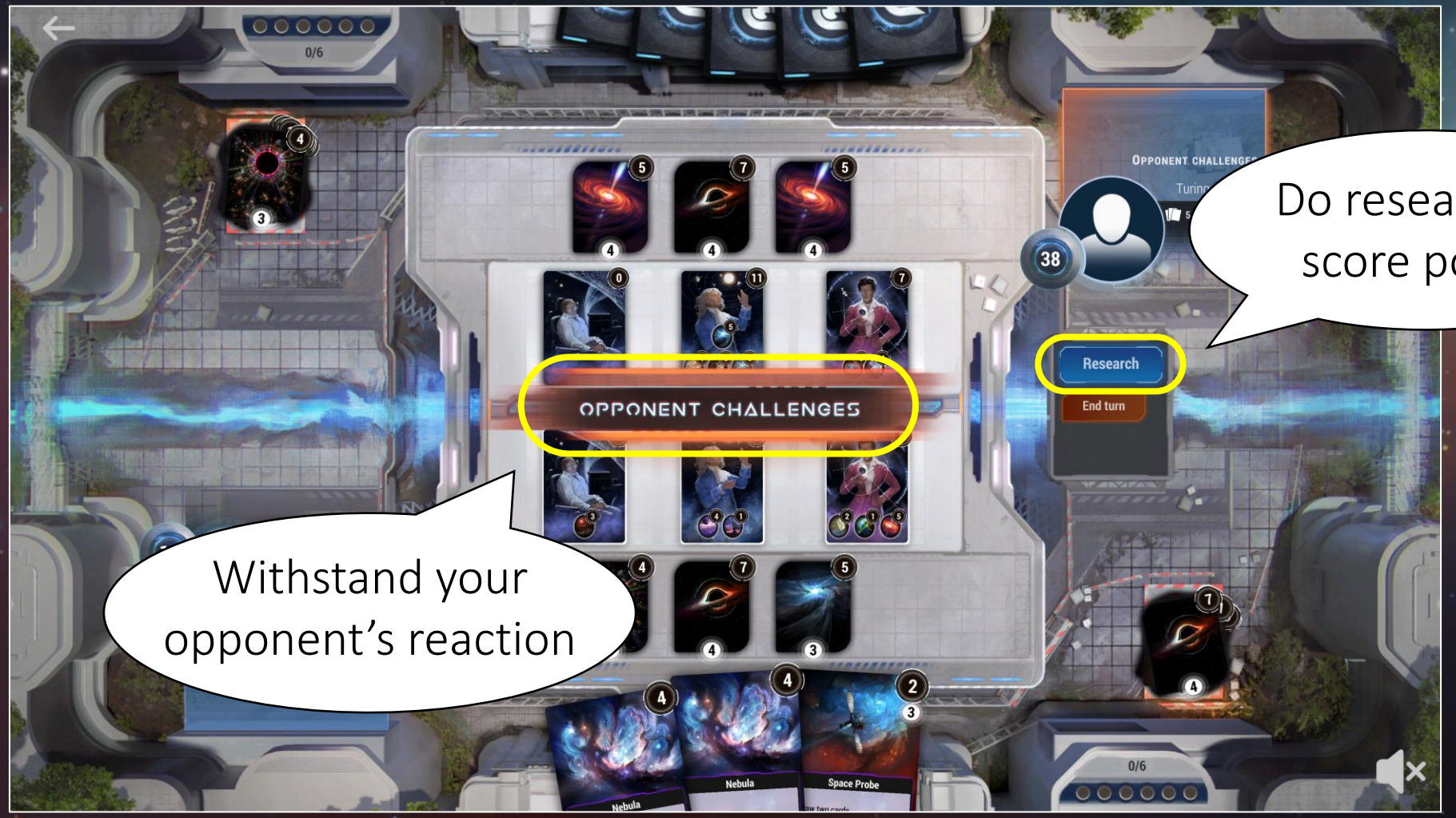
Seeker Chronicles

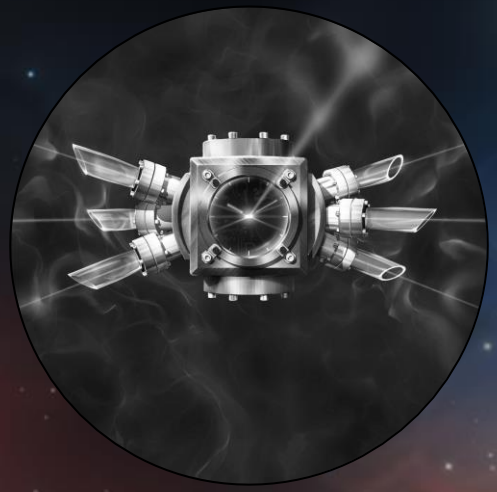


Seeker Chronicles



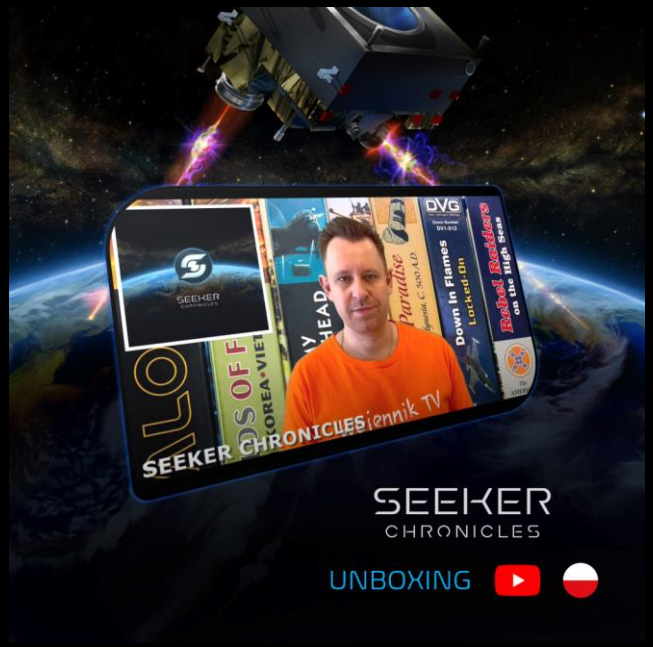
Seeker Chronicles





Community

Peer-reviewed by the community



Science is cool

Imagine researchers sharing pictures
from the labs and blackboards
that carry out that research

Credits to Dolev Bluvstein in the Lukin group at Harvard

Scientists are rockstars

Imagine famous professors
signing cards
on the research topics they developed.

Scientists are rockstars

Prof. Hans J. Briegel, co-inventor of Measurement-based Quantum Computation, sees his invention on a card

Scientists are rockstars

Prof. Thomas Monz

Prof. Gemma de les Coves

Prof. Hans J Briegel

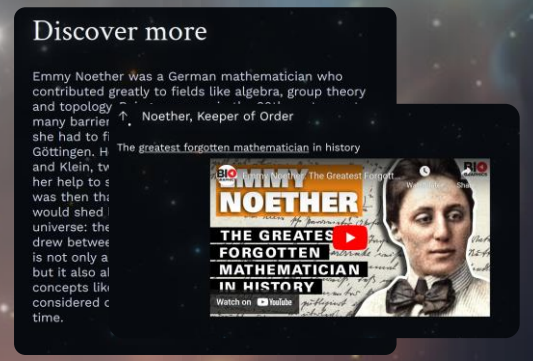
Online Outreach resources

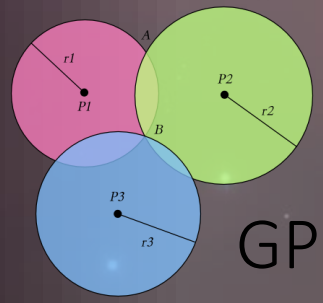
SCIENCE, TECH

CARD

ONLINE RESOURCES

www.seeker-chronicles.com





GPS

OneStone Studios

Education blends with e-Sport

Societal NEED

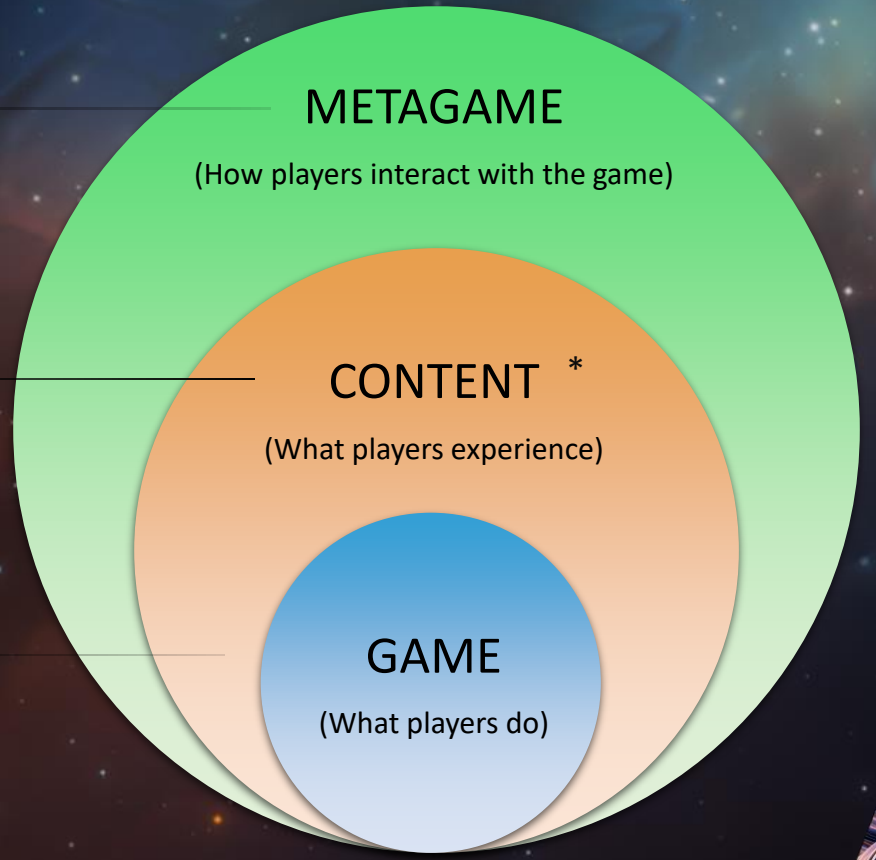
ACTIVE LEARNING

Fosters understanding and literacy in STEM

PASSIVE LEARNING

Fosters interest and familiarity in STEM

Individual NEED

GAMING

Strategic, competitive, immersive, fun