

# *Education on the Horizon: Teaching and Learning with Technology*

## Week 6: Game-Based Learning Pt. 2

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# Recap

- Game is a structured form of play, usually for enjoyment.
- Gameful learning redesigns core elements of a learning environment according to game design principles.
- These principles are fundamentally psychological.

# Your thoughts from last week

- "Praising every achievement maybe manipulative"
- Borrowing game elements mindlessly won't magically motivate students
  - But it's important to understand why good games are so motivating and what we can learn from them
  - A good game-based learning environment can motivate student intrinsically

# Motivation, the force that drives us

- Behavior is motivated by internal (intrinsic) or external (extrinsic) incentives
  - Extrinsic – attention, praise, grades, rewards, money etc.
    - powerful only in short term
  - Intrinsic – feeling of satisfaction, competence, growth, progress etc.
    - lasting effect
- Dan Pink's Talk on Motivation

# How to promote intrinsic motivation?

- Self-determination theory: three conditions for supporting intrinsic motivation
- Autonomy, competence (mastery) and belonging (meaning)
- These three factors can explain why games are intrinsically motivating, and what kind of learning environment we are after.

# Autonomy

- In game: usually we choose what game we want to play
- Ideal learning environment: the learner seeing himself or herself as the primary locus of control

# Autonomy: example

- Explore in safe environment enables sense of autonomy
- Games enabling players to take risks by reducing the negative consequences associated with failure.
  - giving a player infinite lives, freedom to explore the game safe in the knowledge that mistakes will not result in permanent failure.

# Autonomy: example

- In a gameful course, this same feeling can be established
  - allowing students to redo assignments multiple times to achieve mastery
  - providing alternate assignments that mitigate the impact of failed attempts
  - allow for free exploration

# Assassin's Creed - Odyssey tours

- Interactive tours for learning about Ancient Greek
- Quiz at the end of the tour: right or wrong, students will get more information about the topic
- demo video



# Competence (Mastery)

- In game: you know for sure you can become better at playing the game (progress / current status is clear)
- Ideal learning environment: learners engage with course contents because they feel that they can do so successfully

# Competence: Token system

- Token system in Pokemon Go
- Similar system can also be used to motivate and help students keep track of progress
- Tokens are not designed to manipulate students to fish for prizes, but to show clearly what's the progress, and what to do next

Medal Name	Medal Requirements	Bronze Requirement	Silver Requirement	Gold Requirement
 Jogger	Walk a certain distance	10km	100km	1,000km
 Kanto	Register Pokémons in your Pokédex	20	50	100
 Johto	Register Pokémons in your Pokédex	5	30	70
 Hoenn	Register Pokémons in your Pokédex	5	40	90

# Competence: Token system

- Here's an example token system from Khan Academy (an online learning service)

## My badges

Challenge Patches    Black Hole Badges    Sun Badges    Earth Badges    Moon Badges    Meteorite Badges

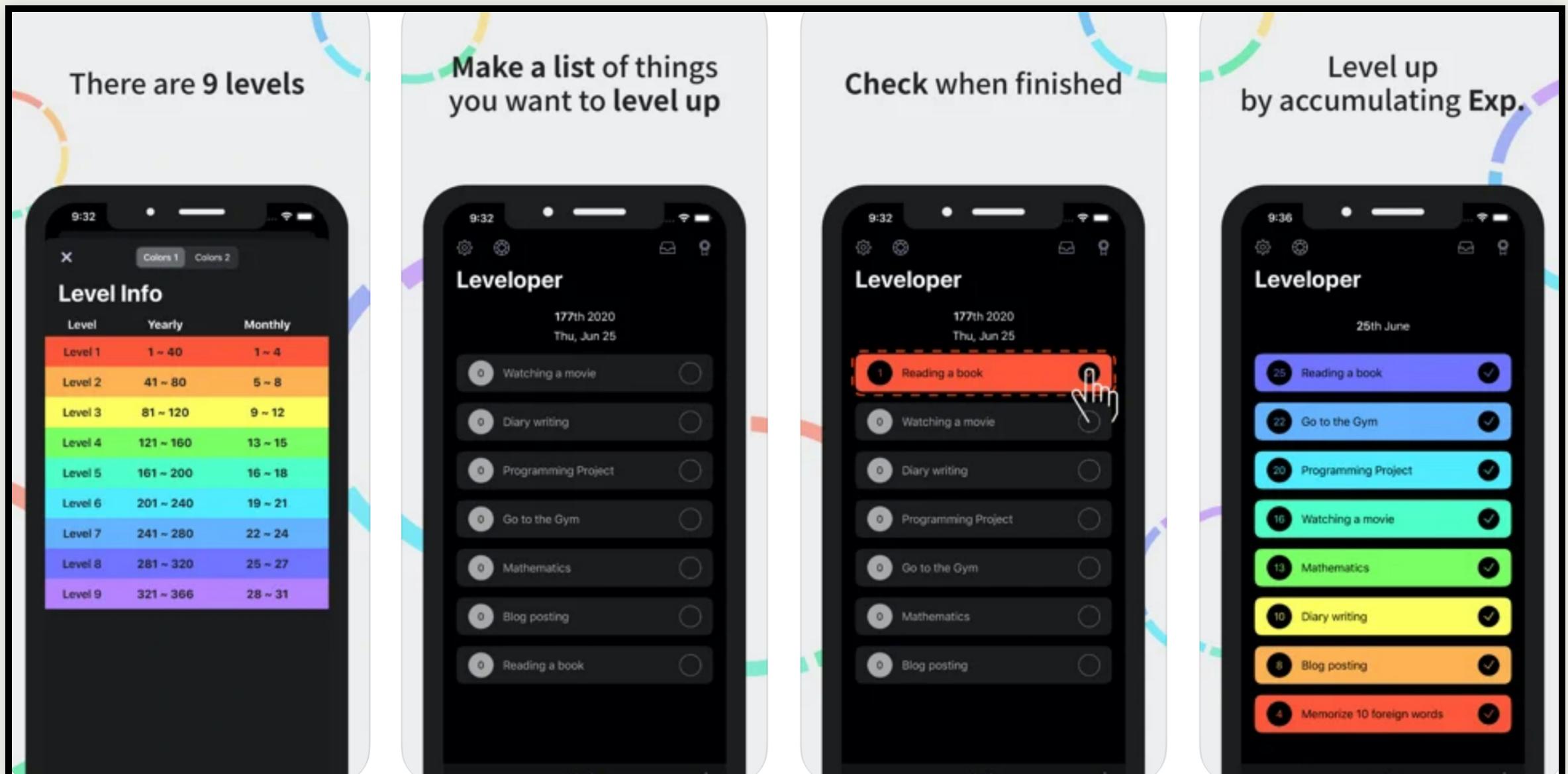
[Check for new badges and avatars](#)

Meteorite badges are common and easy to earn when just getting started.

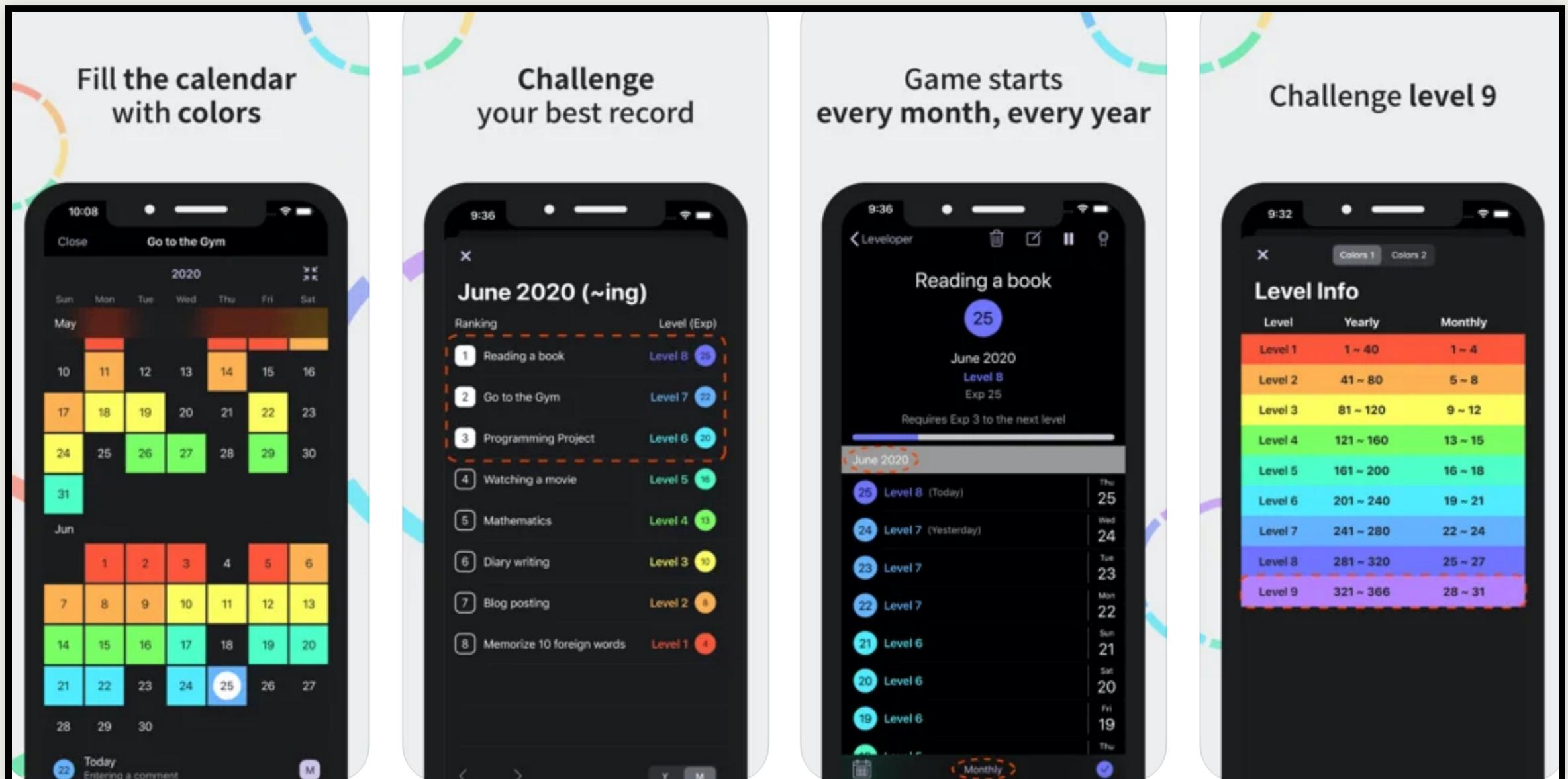
### Badges Earned

 x9 <b>Nice Listener</b> <small>Last achieved 4 years ago in Riemann sums and definite integration <a href="#">and also in ...</a></small>	 <b>Cypress</b> <small>Last achieved 4 years ago</small>	 <b>Challenge Accepted</b> <small>Last achieved 4 years ago in Math</small>
 <b>Ten to the Fourth</b>	 <b>Great Listener</b>	 <b>Act I Scene I</b>

# Competence: EP system



# Competence: EP system



# Belonging (Meaning)

- In game: grow together with the community
- Ideal learning environment: learners feel connected to their teachers and peers
- Can you think of some strategies of connecting students and instructors during online learning?

# Gameful learning environment: example

- GradeCraft
  - A short intro
  - Gradecraft founder talk



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