



## N.O.V.E.L. - Teacher's Guide

In this board game, students will work collaboratively as a team of scientists racing against the clock to create a vaccine and stop the spread of a new, novel pathogen. The game is made up of 5 phases, each with a playing time of approximately 25 minutes. Each phase of the game simulates a different aspect of vaccine development. N.O.V.E.L. was designed to be easily adaptable for classroom use, and this document shares different accommodations teachers can use in the classroom to ensure the game will best suit the needs of their students.

**Suggested Grade Levels:** 5th - 12th

**Number of Players:** 2 - 4

**Time:** 25 minutes per phase, ~2 hours total

### General Adjustments:

- N.O.V.E.L. can be played all at once or each phase played separately, in order.
- Visit [thepartnershipineducation.com/resources/n-o-v-e-l](http://thepartnershipineducation.com/resources/n-o-v-e-l) for the following:
  - Watch the available 'How to Play' video with students prior to playing.
  - With students, view videos that cover the scientific content from each game phase to gain a deeper understanding of the science involved in the vaccine development process.
  - A glossary of terms is available as a PDF document. Provide students with a copy prior to or during game play.
  - Setting up the game prior to students' arrival can help to save class time and allow more time for gameplay.

N.O.V.E.L. is normally played so when the Spread Tracker reaches 100, the game is over. However, adjustments can be made to ensure all students get to play every phase so everyone has the same access to the content and enjoy the game mechanics of each phase. The following adjustments can be made:

- If students reach 100 during *Phase 1* - move tracker back to 1
- If students reach 100 during *Phase 2* - move tracker back to 21
- If students reach 100 during *Phase 3* - move tracker back to 41
- If students reach 100 during *Phase 4* - move tracker back to 61
- If students reach 100 during *Phase 5* - move tracker back to 81

# Phase 1 - Pathogen Research

For advanced learners:

- Place students in groups of two or three. When distributing Expertise cards, ensure the most advanced students have the most cards.
- Pre-set Trait cards on the Phase 1 board that have the highest time and money costs to reveal, such as those that have costs of 12 Time and 12 Money (Type-Parasite). Or, Trait cards can be pre-set so that when read on the Pathogen Codex, they will result in the students making a 'live attenuated vaccine', which has the highest Experimental Threshold.

For those who need extra support:

- Place students in groups of 4.
- Pre-set Trait cards on the Phase 1 board that have the lowest time and money cost to reveal, such as those that have costs of 8 Time and 8 Money (Type- Soilborne). Or, Trait cards can be pre-set so that when read on the Pathogen Codex, they will result in the students making a 'recombinant vaccine', which has the lowest Experimental Threshold.

# Phase 2 - Vaccine Formulation

For advanced learners:

- Ingredient cards can be distributed to each player in advance so they are significantly mixed and require more effort from students to make color matches.

For those who need extra support:

- Ingredient cards can be distributed to each player in advance so they receive a starting set that is likely to result in color combinations.
- If the Experimental Threshold is not met or exceeded on the first roll, allow for one reroll or allow students to move on to Phase 3 automatically.

# Phase 3 - Animal Testing

For advanced learners:

- Challenge the students to use at least one animal tile from each species.

For those who need extra support:

- Provide another large, free tile at the start of the phase in addition to the starting animal determined at the end of Phase 2.
- Suggest that students lay out all tiles in advance so they have a set plan, then they can place the tiles in the Vivarium as bought.
- Animal tiles can be arranged into species (by color) so students can easily identify which tiles are available.

## **Phase 4 - Human Testing**

For advanced learners:

- Increase the amount of time required to conduct a test from 10 Time tokens to 12 Time tokens.

For those who need extra support:

- Decrease the amount of time required to conduct a test from 10 Time tokens to 5 Time tokens.
- Allow students to keep all earned successes, even after 3 adverse side effects have occurred within a stage.

## **Phase 5 - Distribution**

For advanced learners:

- Lay out all tiles in advance so Hospital tiles are far away from Production Facility tiles.

For those who need extra support:

- Lay out all tiles in advance so Hospital tiles are close to Production Facility tiles.
- Suggest students talk and plan out their routes in advance before completing any turns.