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Imagine Robotify Logic Model

Imagine Robotify is an elementary and beyond browser-based robotics and computer science learning program. Students learn to code by programming virtual robots with over 1,000 different coding activities and games.

This logic model provides a conceptual framework of how Imagine Robotify is intended to work. It shows what is required to make it effective and the outcomes that teachers can expect students to achieve.

Program Inputs

IMAGINE ROBOTIFY

- Engaging content and courses that include trackable student-created daily and weekly goals
- Curriculum that meets many STEM or coding learning standards
- Program design that supports the development of creativity, communication, critical thinking, and collaboration skills (Four Cs of STEM)
- Teacher curriculum maps, lesson plans, slides, summaries, worksheets, offline lessons, project resources, assessments, and rubrics for assessments
- Reporting on student use (tasks attempted, tasks completed, active time, projects created, and lessons completed)
- Student-facing worksheets, offline lessons, and slides
- Courses, challenges, assignments, instructional videos, practice activities, simulations, projects, competitions, and alternative assessments

IMAGINE LEARNING

- Onboarding and implementation support
- Professional development and coaching for teachers and administrators
- Flexible implementation models for content delivery
- Customer support to troubleshoot immediate issues

DISTRICT

- Networked computers with proper memory, media appliances, and headsets
- Adequate classroom or lab space
- Online access to Imagine Robotify and enough bandwidth to support use
- School implementation plan

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Classroom Activities

STUDENT ACTIVITIES

- Students engage in the following activities: courses, lessons, challenges, and assignments
  - 45–90 minutes per week for elementary grades
  - 60–120 minutes per week for secondary grades
- Students monitor progress against goals weekly
- Students use algorithms and bring together other learned skills to solve assigned challenges
- Students work together on how to solve problems presented in challenges or projects
- Students create or participate in projects (based on teacher assignment)
- Students compete and communicate with each other in friendly competitions (based on teacher assignment)

TEACHER ACTIVITIES

- Teachers attend appropriate number of professional development sessions for implementation success
- Teachers set up and assign students to their classrooms
- Teachers plan weekly using teacher resources (lesson plan, summary, slides, worksheets, and curriculum map)
- Teachers implement lessons, courses, challenges, projects and competitions based on time suggested for grade bands
- Teachers tailor instruction to the student by monitoring student usage and student performance reports weekly and monthly

Outputs

STUDENT OUTPUTS

- Students progressed through content or skills and student-created daily and weekly goals
- Students made consistent progress in courses, lessons, and challenges (demonstrated progress utilizing the student progress bar)
- If assigned by a teacher, students completed projects
- If assigned by a teacher, students participated in competitions

TEACHER OUTPUTS

- Teachers completed professional development sessions and felt prepared to support student learning in computer science and coding
- Teachers' classrooms met their lesson plan goals of completing courses, challenges, projects, and competitions
- Teachers accessed progress reports at least once per week
- Teachers monitored student performance and helped students where they were struggling

Outcomes

SHORT-TERM OUTCOMES

- Improved proficiency in computer science standards
- Improved creativity, communication, critical thinking, and collaboration skills
- Proficiency in basic programming skills using loops, variables, functions, and algorithms
- Proficiency in basic robotics programming skills including movement, sensor, and controls
- Improved programmatic thinking in iterative design, storyboarding, and code review

LONG-TERM OUTCOMES

- Increased interest in programming and robotics career fields
- Develop students' Four Cs of STEM for college and career readiness
- Increased enrollment in computer science-related education/career paths
- Improved readiness for more advanced studies in computer science or robotics
- Improved performance in subsequent STEM courses

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imaginelearning.com/imagine-robotify
877-725-4257 • solutions@imaginelearning.com