

Curriculum Details for *Project Interactivate*

	Program Description	Practitioner Expert Review	Content Expert Review
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Project Interactivate

Grade Level: 3–8
Content Focus: Math
Costs: Free

Developer Contact Information

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User Comments ([add a comment](#))

There are 0 user comments on file.

Program Description

Design Summary

Project Interactivate is a modular, computer-based curriculum that is easily used in an afterschool setting. It uses Java-based interactive courseware as a means of inquiry-based learning in math concepts and skills. This focus allows students to explore math in such a way that helps them develop their own mental images and understanding of mathematical concepts. The curriculum allows teachers to account for different learning styles and levels when designing the lessons and setting up the activities. The dynamic nature of using the computer allows students to create examples of concepts themselves and get a deeper sense of the mathematical content and how to apply it.

The ideas of exploration, inquiry, and hands-on learning which form the basis for Project Interactivate spark students' curiosity and ability to question. The website and activities are compatible with most computer systems. Other materials available include: exploration questions, lesson plans, discussion questions, a math dictionary, and alignments to standards and some math textbooks.

Costs and Staff Training

There is no cost for this curriculum, as all components are available on the Internet for free. Training costs \$500 per instructor but is not required.

Staff Qualifications

This curriculum can be used by most anyone, including parents, teachers, and paraprofessionals. No formal teaching experience is required, although some knowledge of mathematics is useful. Both content and practitioner expert reviews recommend that instructors have a strong understanding of the mathematics behind all the activities and are prepared to field questions that might come up from students.

Standards Alignment

- **National:** National Council for Teachers of Mathematics (NCTM)
- **State:** Old standards for Michigan, North Carolina, and Georgia

Research Base

Project Interactivate is based on research supporting the use of dynamic tools in teaching mathematics. Other foundations include the principles and standards of the NCTM.

Evaluation Details

Evaluation Details

This curriculum has not been formally evaluated.

Overall Strengths/Overall Challenges

Strengths

- Breadth of activities that are offered.
- Teacher can choose parameters and difficulty levels
- Graphic and geometric modeling.
- Great tool for helping students practice skills.
- Engaging, lets students just play, explore, and learn math.
- Free, no cost beyond computers and internet access.
- Computer format is attractive to students.

Challenges

- Requires teacher to play with the site, become familiar with it, and think about what will and will not work with students.
- Would be helpful to have more activities for first and second grade students, as well as more activities modeling percentages.
- Would be helpful if the activities were labeled by grade level. Site is not well organized in general.
- Some Exploration Questions are not very deep, and there is no step-by-step guide for students to follow.
- Would be helpful to have worksheets that are easy for students to use to guide them through a specific activity.

Practitioner Expert Review

Practitioner Expert Background

Two practitioners contributed to this review of Project Interactivate. One practitioner has been teaching for 20 years, and has an undergraduate degree in mathematics and a masters' degree in educational technology. She has been using Project Interactivate in her elementary school classroom for the past several months. She uses the program on a daily basis, and at least two thirds of her lessons use Interactivate. Her students are a diverse mix of White, African American, Latino, and Asian students from a range of income backgrounds. The second practitioner has been teaching for two years, and using Project Interactivate for the past year in her fourth grade classroom. Students are primarily middle income, with a wide range of racial backgrounds. She uses Project Interactivate a few times per week.

Logistics

Training

- There is training offered.

Set-up/preparation

- Takes about 20 minutes to prepare for a lesson; picking vocabulary words, concepts to discuss with students, and what activities to use.
- If it is being used as practice, no preparation is needed.
- Some more complicated lessons may require more time to prepare.
- Students can work independently or with a partner. One or two students per computer would be effective.

be effective.

Student Engagement

- Students ranked the Project Interactivate activities toward the top of their favorite activities of the year.
- Students are willing to engage in multiple problems on the computer
- Activities that involve modeling, such as the “factorize” activity, are popular.
- Immediate feedback from the program seemed to be motivating for students.
- Students rarely seemed bored and didn’t complain about using the curriculum. They also enjoyed the wide variety of activities.
- Visual representations of mathematical concepts were effective teaching tools.
- One practitioner has encouraged parents to use particular Interactivate activities for student practice at home.

Content

Adaptability to instructor needs

- Activities have varying difficulty levels.
- Wide variety of activities. Students can continue on to challenging activities or return to ones they particularly enjoyed.
- Complicated activities are taught effectively using computer technology.

General skills taught

- Social skills such as waiting your turn and respecting others’ learning.
- Basic coordination and fine motor skills.
- Can add elements that promote cooperation and teamwork skills.

Addressing diverse student needs

- Content is age-appropriate, some may need to be altered to reach the youngest students.
- Students of all backgrounds have enjoyed and benefited from the curriculum.
- Reaches visual learners.

Strengths and Challenges

Strengths

- Offers a breadth of activities.
- Teacher can choose parameters and difficulty levels
- Graphic and geometric modeling.
- Effective tool for helping students practice skills.
- Engaging; allows students to play, explore, and learn math.

Challenges

- Few activities for first and second grade students or that model percentages.
- Activities are not labeled by grade level.
- There are no worksheets to guide the students through a specific activity.

Content Expert Review

Content Expert Reviewer

Janet Vignaly

Janet Vignaly is a licensed mathematics teacher who taught high school algebra and geometry in Boston, Massachusetts and also worked with students in afterschool settings for extra help in math. Previously, she worked for four years in Nairobi, Kenya, as a primary school science and math teacher. There she also helped develop literacy and feeding programs for children in impoverished settings. She received her Master's degree from the Teacher Education Program with a focus on mathematics at the Harvard Graduate School of Education.

Content

- Topics range from number lines and fractions to algebra, geometry, probability/statistics, and others.
- Some activities could likely be used effectively for exploration of math topics: Focus on Functions (explore graphs and model real world data), Focus on Statistics (design surveys and experiments for students to conduct and represent data on graphs)

Skills

Academic Skills

- Algebra: plotting points, best-fit lines for data, general characteristics and behaviors of functions.
- Number Sense: Fractions, number lines, multiples, factors, remainders, estimating.
- Probability
- Statistics: measures of central tendency, distribution, visual representations of data.
- Others include fractals, complex numbers, and optical illusions.

Non-Academic Skills

and telling time) to high school (exploring derivatives and integrals.

- The majority of activities seem to be appropriate for middle school and early high school.

Learning Styles Addressed

- Movement/spatial learning: Geometry activities require students to think spatially.
- Interpersonal learning: Discussion questions are offered, and some of the exploration activities are designed for students to work together.
- Artistic learning: Equivalent fractions, tessellation, transformation, and fractal activities all involve artistic representations.

Multiculturalism

- Not explicitly addressed in this curriculum

Strengths and Challenges

Strongest Features

- Free, no cost beyond computers and internet access.
- Computer format is attractive to students
- Allows students to do as much practice as they need in selected topics.
- Gives immediate feedback to students.

Challenges and Drawbacks

- Preparation is required.
- There is no step-by-step guide for students to follow.
- Some function activities do not use standard mathematical notation.