The Adventure Academy **Curriculum**

Age of Learning developed Adventure Academy to help elementary- and middle-school age learners build critical knowledge of high-priority curriculum topics that are essential for success in school. Focusing on language arts, math, science, and social studies, Adventure Academy offers thousands of highly engaging and effective learning activities in an immersive virtual world. In addition to building academic skills and knowledge, Adventure Academy helps build children's self-confidence in and excitement about learning.

A Research-Based Development Process

Age of Learning's Curriculum Planning and Design team develops the Adventure Academy curriculum through a multistep process, beginning with an in-depth review of the frameworks and standards that drive educational systems across the United States and around the world. These documents include but are not limited to the following:

- State standards frameworks
- National standards frameworks
- International standards frameworks and guidance documents
- Frameworks developed by nonprofit groups and professional consortia, including
  - » National Geography Standards (National Geographic Society)
  - » Principles and Standards for School Mathematics (National Council for the Teachers of Mathematics)
  - » Project 2061, *Benchmarks for Science Literacy* (American Association for the Advancement of Science)
  - » Next Generation Science Standards
  - » NAEP Assessment Frameworks for Mathematics, Reading, Writing, Science, U.S. History, Geography, Civics, Economics, Technology and Engineering, and Arts (National Association for Educational Progress)

From a review of this universe of standards, results of widely administered standardized tests, and an extensive Age of Learning survey of teachers around the U.S., the team identifies the high-priority curriculum topics that students struggle with most in school and the topics that require the most teaching support. Using this process, the team ascertains general levels of student proficiency with key concepts and skills across ages and grade levels, levels of interest and engagement with those topics, and aspects of those topics best suited to delivery on a digital platform. As a result, the Adventure Academy curriculum emphasizes hundreds of key topics in areas that include reading comprehension, vocabulary development, mathematical operations, fractions, world geography, U.S. history, physical science, life science, earth science, and scientific inquiry.

The Curriculum Team

All members of the Adventure Academy Curriculum Planning and Design team are master educators with advanced degrees. Collectively, the department has hundreds of years of teaching experience with tens of thousands of students. The team's expertise spans curriculum and pedagogy; subject matter specializations, including life/earth/physical sciences, U.S. history, mathematics, and English language arts; and instructional design.

Overview of the Curriculum and Learning Objectives

The overall curriculum goal for Adventure Academy is to provide a broad and rich resource that complements children's experiences in school and helps them build critical knowledge and skills in language arts, math, social studies, and science. Adventure Academy provides opportunities for children to practice essential concepts and skills, discover new ideas and information in an engaging way, and develop a lifelong love of learning.

Adventure Academy's curriculum is organized as a multilevel hierarchy where subject areas are broken into component topics, such as reading comprehension skills, mathematical operations, scientific inquiry, and world geography. These component topics are unpacked to derive the essential learning objectives that are related to each one. A learning objective is a narrow, granular statement about a concept, skill, understanding, or datum that a learning activity can address. For example

- Subject area: science
- Type of science: space science
- Topic: the Sun
- Learning objective: Students will understand that the Sun is approximately 93 million miles from Earth.

Adventure Academy's curriculum is currently comprised of thousands of learning objectives that are captured within more than 100 thematic units. These thematic units are shown in the Curriculum Scope below.

English Language Arts

READING

Main Idea and Key Details
Inference
Topic and Supporting Details
Central Message/Theme
Point of View
Comprehension Strategies
Text Structures
Text Features
Reading Complexity
Decoding Strategies/ Vocabulary Development
Synthesizing Information from Multiple Texts

WRITING

The Writing Process
Main Idea and Key Details
Topic, Evidence, and Supporting Details
Sentence Structure
Paragraph Structure
Essay Structure
Research Skills
Writing Fluency

LANGUAGE

Word Meanings/ Context Clues
Sentence Structure
Figurative Language
Parts of Speech
Spelling
Punctuation
Mechanics

Math

WHOLE-NUMBER OPERATIONS

Word Problems
Multi-digit Operations
Multiplication
Division
Fact Fluency: Addition
Fact Fluency: Subtraction
Fact Fluency: Multiplication
Fact Fluency: Division
Place Value

MEASUREMENT AND GEOMETRY

Conceptual Understanding of Unit
Word Problems
Time
Volume
Perimeter
Area
Measuring Angles

FRACTIONS AND DECIMALS

Unit Fractions
Equivalent Fractions
Adding Fractions
Subtracting Fractions
Multiplying Fractions
Dividing Fractions
Operations with Mixed Numbers
Operations with Different Denominators
Comparing Fractions
Word Problems
Factoring
Decimal Place Value
Adding Decimals
Subtracting Decimals
Multiplying Decimals
Dividing Decimals
Comparing Decimals

ALGEBRAIC THINKING

Order of Operations

Science

LIFE SCIENCE

Life on Planet Earth
Adaptations
Life Cycles
Microorganisms
Human Body

EARTH SCIENCE

Earth Processes
Environments and Ecosystems
Water Cycle
Climate
Natural Resources

SPACE SCIENCE

Solar System
Planets
Stars
Moon

PHYSICAL SCIENCE

Atoms and Molecules
Forces and Motion
Properties of Matter
Electricity

SCIENTIFIC INQUIRY/ ENGINEERING PROCESS

Inventors/Inventions
Instruments and Tools of Science
Energy

Social Studies

MAPS

Maps and Globes

RESEARCH

Research Skills
Evaluating Credibility of Sources

HISTORICAL THINKING

Historical Inquiry
Historical Context/ Point of View
Chronological Thinking

GEOGRAPHY

Geography
World Cultures

UNITED STATES HISTORY

Indigenous America
Exploration and Conquest
Colonization and Conflict
Colonial America
Road to Revolution
Revolutionary War
The Constitution and the Founding Documents
The New Republic

Learning Activities, Adventure Maps, and Kiosks

Learning activities. Curriculum appears throughout Adventure Academy but most commonly within learning activities that take the form of games, puzzles, videos, and reading experiences, which include infographics, articles, and books. Each learning activity is built around one or more learning objectives and designed to ensure that essential concepts are addressed, and misconceptions are avoided or debunked.

Adventure Maps. Learning activities are curated into groups around themes, topics, and subject areas to provide opportunities for deeper exploration and conceptual understanding. These groups are presented within Adventure Maps, such as the one below (See Figure 1.).

This Adventure Map presents information about commonplace foods and spices and the science and history that underlie them. Each of the eight “hot spots” on the Adventure Map is dedicated to one such food or spice and reveals a sequence of learning activities related to that topic.

Adventure Maps like this one are designed to provide broad, cross-curricular explorations, while others are designed to provide a “narrow-but-deep” experience. The narrow-but-deep approach is frequently applied to mathematical or scientific concepts, such as fractions or the water cycle. Learning sequences within Adventure Maps are typically designed to include, at minimum, the following activity types:

- A “hook” to generate interest, often a humorous or dramatic video
- A reading experience, such as a brief article or infographic
- An interactive experience, such as a puzzle or game
- A practice activity to reinforce concepts, called Show What You Know

Kiosks. Learning activities are also delivered to players through kiosks (See Figure 2.). Kiosks are repositories that house all of the learning activities within Adventure Academy so that children can select them one at a time. Children can search the kiosks by activity type, subject, level, or keyword. Learning sequences within kiosks will also be released so that children can complete a series of related activities together instead of just one at a time.

Figure 1. Adventure Map

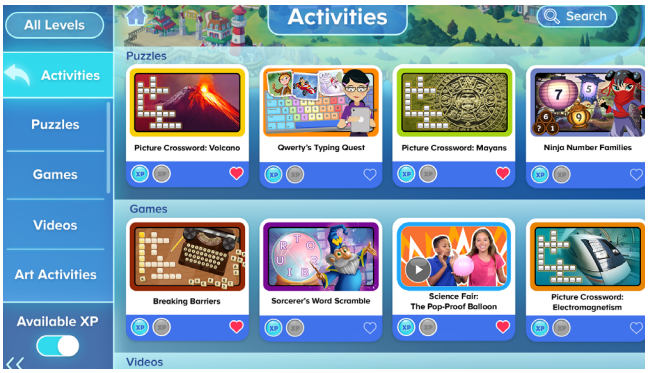

Figure 2. Kiosk

The Benefits of Massively Multiplayer Online Games (MMOs)

Massively multiplayer online games—particularly those that are delivered as ever-expanding services, such as Adventure Academy—provide a boundless canvas for designing and delivering educational content. They can contain zones designed to accompany content related to any subject area or theme, and these zones can be added to or modified without limit. They also enable players' usage patterns to inform the focus, design, and delivery of the content. For Adventure Academy, this helps ensure that the curriculum content delivers intended learning objectives, is engaging to students, and is easy to discover within the game.

Executive function. MMOs are also excellent venues for children to develop skills related to executive function. The Harvard University Center on the Developing Child defines executive function this way:

> "The mental processes that enable us to plan, focus attention, remember instructions, and juggle multiple tasks successfully."

All of the concurrent activities that go on in Adventure Academy—the completion of learning activities to drive leveling up, as well as questing, harvesting, crafting, and social interaction—provide opportunities for children to develop executive function skills. For example, children can plan their experience in the game, set goals and focus their attention on accomplishing those goals, remember instructions for completing tasks, and manage multiple simultaneous tasks. Honing these skills inside an MMO helps prepare children to apply them in other contexts as well.

Agency and autonomy. We know that having control and some choices related to what they learn and how they learn it makes children more motivated to persevere and more likely to retain and successfully apply what they've learned. The open-ended nature of an MMO offers children that kind of agency and autonomy over their experience.