



# STRATEGIES



The **K20 CENTER FOR EDUCATIONAL AND COMMUNITY RENEWAL** is a statewide education research and development center that promotes innovative learning through school-university-community collaboration. Our mission is to cultivate a collaborative network, engaged in research and outreach, which creates and sustains innovation and transformation through leadership development, shared learning, and authentic technology integration.

The Gaining Early Awareness and Readiness for Undergraduate Program (GEAR UP) is a federal grant provided by the U.S. Department of Education to help students prepare for and pursue a college education.

In 2012, the K20 GEAR UP program started its work with sixth and seventh graders and will continue working with these students as they move through middle school, high school, and into higher education.

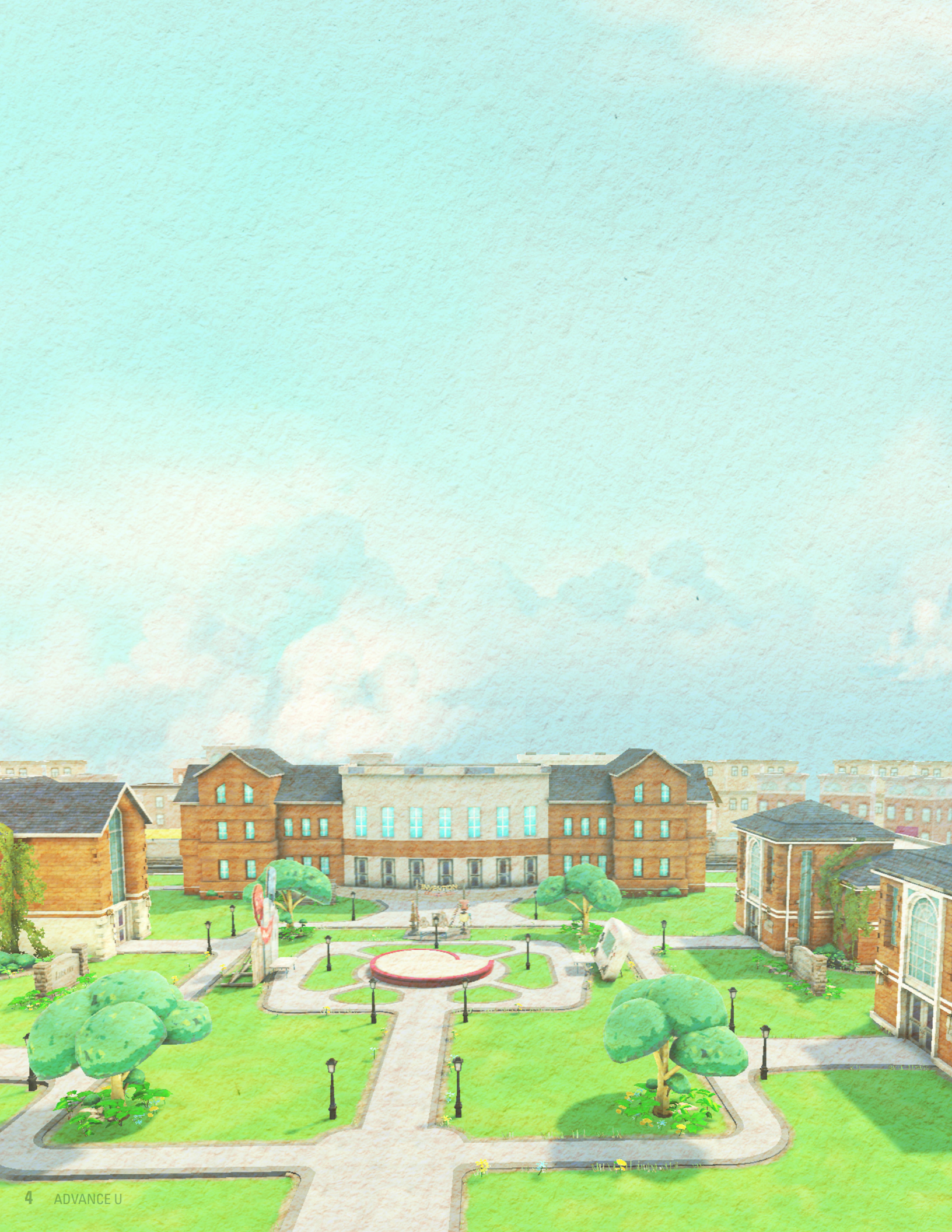
**GEAR UP FOR THE PROMISE** (Promotion of Readiness through Opportunities that Motivate and Increase Student Expectation) is K20's GEAR UP program with Oklahoma City Public Schools. PROMISE specifically seeks to:

- Increase the percentage of PROMISE students who are academically prepared for higher education and future careers upon graduating from participating schools
- Increase the high school graduation rates and higher education enrollment rates of participating PROMISE schools
- Increase PROMISE students' and families' knowledge of higher education options, preparation, and financing.

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# WHAT IS THIS GAME ABOUT?

Welcome to Advance U: Learning Strategies, an engaging and fun way to introduce students to the concepts of goal setting and time management.

In this game, the president of McLarin Academy has proposed three semester-long competitions in an effort to get students thinking about their long-term goals. Acting as a student at the academy, players must choose at least one long-term goal from these three competitions, helping other characters along the way as they learn to set goals and manage their time to meet those goals.

Over the course of the game, students will come to understand how to set goals, perform task analyses, and how to use that information to create schedules, all while navigating through an authentic learning environment.

The purpose of this guide is to support the effective integration of Advance U: Learning Strategies into your classroom. This Teacher's Guide is designed to help you:

- **Gain familiarity with the game:** Providing an overview of the game content and the learning objectives it is designed to cover.
- **Explain the game:** Providing information on how students play the game.
- **Extend the lessons:** Providing information for additional activities and readings that will help you pre-teach, extend, and consolidate the game's learning objectives.

## LEARNING OBJECTIVES

**Over the course of playing Advance U: Learning Strategies, your students will come to understand the following:**

**Goal Setting:** Students will learn the importance of setting long- and short-term goals and the differences between the two.

**S.M.A.R.T. Goals:** Students will learn to build goals that are specific, measurable, attainable, relevant, and timely.

**Task Analysis:** Students will learn to break down their goals into smaller tasks so they can make a plan to reach their goals.

**Time Management and Scheduling:** Students will learn to build weekly schedules and manage their time to follow those schedules and work toward their goals.

# THE SCIENCE

## Goal Setting

Research on the concept of goal-setting theory and its impact on productivity and achievement dates back to at least the early 1970s with the work of Gary Latham and Edwin Locke. According to Latham and Locke (1990, 2006), learning goal-setting theory and techniques can help subjects improve performance across multiple domains. Their studies show that subjects who utilize goal-setting techniques are more motivated to succeed, more committed to their tasks, and demonstrate higher levels of performance than their peers. Additional studies also show a high positive correlation between student goal-setting skills and those students' grades and test results (Day & Tosey, 2011; Morisano, Hirsh, Peterson, Pihl, & Shore, 2010).

At its core, goal-setting theory is based on the observation "that conscious human behavior is purposeful . . . [and] regulated by the individual's goals" (Latham & Locke, 1990). By setting and maintaining goals, a person is able to control and direct their behavior and actions. Latham and Locke (1990) state that the setting of a goal serves as a motivating factor that can improve subject performance and self-efficacy.

According to Latham and Locke (1990), effective goals should be developed first with a strongly defined distal, or long-term, goal and then broken down into more manageable proximal, or short-term, goals. Goals must be tailored to the subject. Goals that are beyond a subject's capabilities result in lower motivation and performance. Upon realizing a proximal goal, self-evaluation and feedback influences both performance as well as the attainment of the next proximal goal (Latham & Locke, 2006). This also allows for refinement of all subsequent proximal goals.

The most common method of teaching goal-setting is through the S.M.A.R.T. Goals method (Doran, 1981). While the actual word attached to each letter differs based on author, for the purposes of this instruction, goals should be specific, measurable, attainable, relevant, and timely.

## **Task Analysis**

In order to effectively set goals, students must be able to independently assess their own learning (Zumbrunn, Tadlock, & Roberts, 2011; Zimmerman & Moylan, 2009; Panadero & Alonso-Tapia, 2014). To do this, students need to identify their distal learning goal, analyze the requirements of that goal, identify the prerequisites, and then determine the required sub-tasks (or short-term goals) needed to reach their long-term goal.

Students do this by answering a series of questions. What is the end goal of completing a task? What are the steps to reach that goal? What do I still need to know to complete these steps? Once these questions are answered, students can then create their action plans by synthesizing the answers to determine their motivations for task: what they know, what they need to know, and how they are going to learn the information they need to bridge that gap.

Student self-efficacy, motivation, and outcome expectations are driving factors in the student's ability to accomplish this effectively. This process is often complicated by students lacking a clear idea of the assessment criteria related to a learning objective or having little interest in the topic, which results in low motivation (Panadero & Alonso-Tapia, 2014). However, effective task-analysis abilities are integral to effective goal setting.

## **Time Management**

Time management has been defined as a subject's "effective use of time while performing certain goal-directed activities" (Claessens, van Eerde, Rutte, & Roe, 2007). Students must be able to prioritize tasks, estimate the time required to complete those tasks, schedule the tasks, and then be capable of adjusting that schedule in response to unexpected events (Hellsten, 2012). Panadero and Alonso-Tapia (2014) categorize it as a key component of both task analysis and goal setting.

While research has found that effective time management skills lower stress and anxiety, as well as increasing test scores, Wendelien van Eerde (2003) points out that the effectiveness of time management techniques is often measured by a subject's improvement in meeting their goals. Paris and Paris (2001) state that to effectively teach time management, students must be exposed to the concepts indirectly through modeling, directly through explicit instruction, and then through practice of the instructed skills. Such strategies are also endorsed by Zumbrunn and colleagues (2011).

# HOW TO PLAY THE GAME

## THE GAME

Advance U: Learning Strategies is an interactive story that takes place over the course of a 16-week school semester at McLarin Academy. During this semester, students will learn about goal setting and S.M.A.R.T. Goals, task analysis, time management, and scheduling. Each character within the game has his or her own distinct personality, problems, and goals for your students to discover. As the story advances, students have the opportunity to work toward up to three different long-term goals.

At the start of the game, students will need to pick one long-term goal from the three available. Over the course of the game, they will perform task analyses to plan out how they will reach their long-term goal and then create short-term goals and weekly schedules to enact that plan. Along the way, students will have to work with various NPCs to reach their goals while dealing with distractions and road blocks that will force them to revise their plans. Each week, the students will have the opportunity to revise their task analysis, short-term goals, and schedule to better support achieving their long-term goals.

The students' understanding of the concepts taught throughout the game are tested both through their application of the information as well as through metacognitive questions that require them to think about the different concepts and how they interact with each other.

## THE COMPETITIONS

Within the story of Advance U: Learning Strategies, students can take part in up to three different competitions, each of which provides them with a long-term goal they must work toward over the course of the game. Each of these goals requires the students to perform actions and raise their skills to meet the goal.

While students will start by choosing to work on only one of these goals, over the course of the game they will have the opportunity to add one or both of the other long-term goals to their workload, thus increasing the difficulty. Though it is possible to complete all three competitions successfully in a single game, students will find that the thinner they stretch themselves, the harder it will be to manage their time and complete their goals effectively.

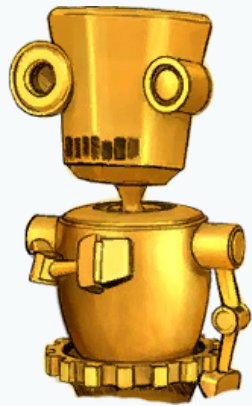




### **Drama Competition**

By signing up for the drama competition, students have the long-term goal of "I will write and perform a play to win the drama competition by the end of 16 weeks."

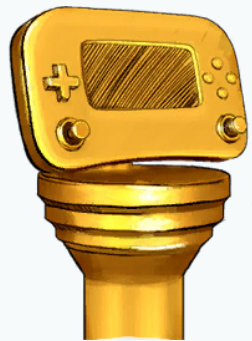
Working with Richard, students must study, research, and then spend time writing and rehearsing to prepare their play to present at the end of the semester; and along the way, they will also need to find someone to proofread their play and an actor.



### **Invention Fair**

By signing up for the invention fair, students choose the goal "I will design and build an invention to win the Invention Fair by the end of 16 weeks."

Working with Miguel, students must study, experiment, and build their invention to present it at the end of the semester. They'll need some help from others on their design and with testing, though.

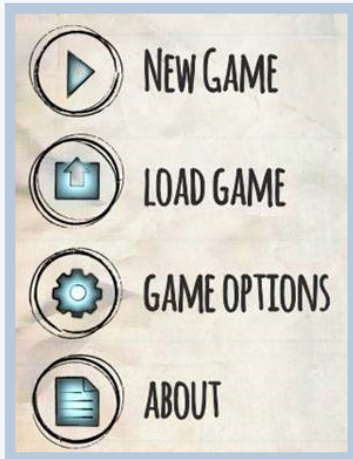


### **Game Design Competition**

By signing up for the game design competition, students adopt the long-term goal of "I will design and program a game to win the game design competition by the end of 16 weeks."

Working with Cosima, students will need to study, design, and program their video game for presentation at the end of the semester while getting a little help with the writing and, of course, the playtesting of the game.

# THE INTERFACE



## The Main Menu

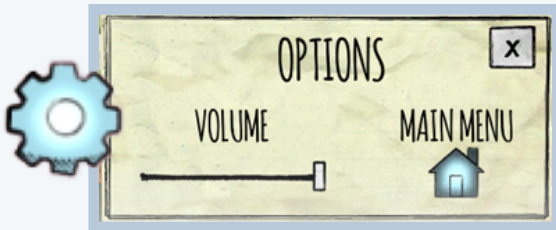
**New Game**—allows students to start a new game of Advance U: Learning Strategies

**Load Game**—allows players to continue a game already in progress (disabled if they haven't played before or if they have already completed their prior game)

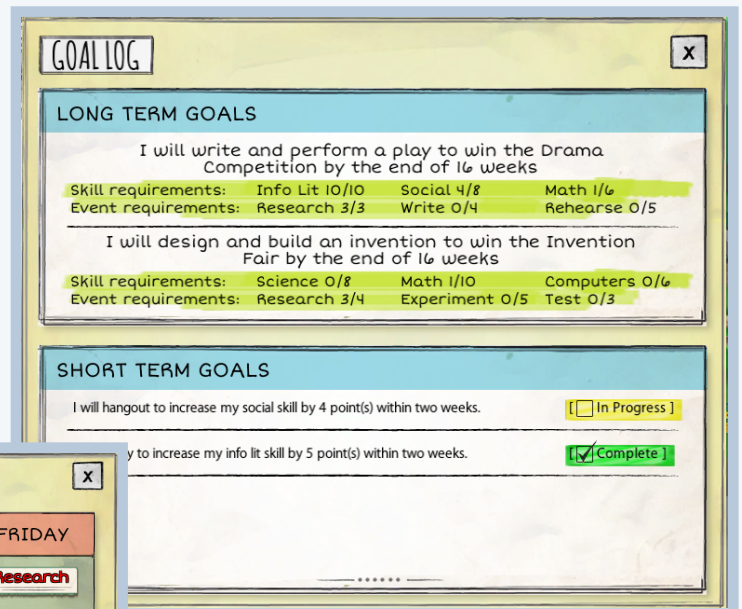
**Game Options**—brings up a menu that will allow students to switch the game's language from English to Spanish and adjust the volume

**About**—brings up a screen giving more information about the K20 Center

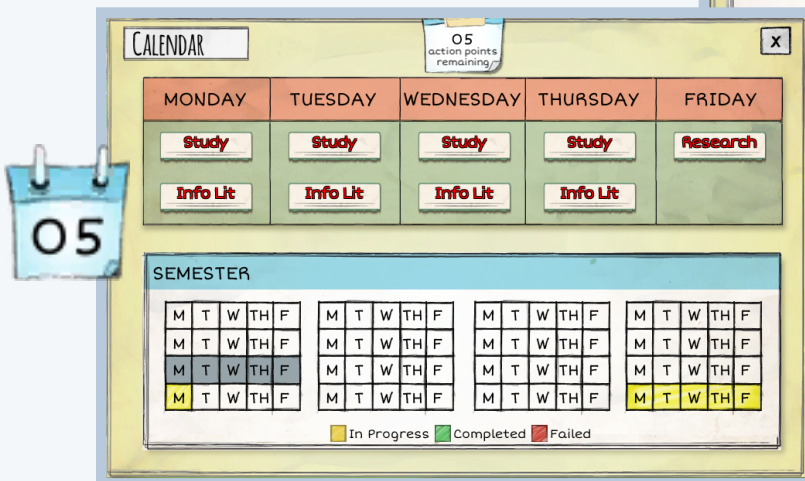
## The In-Game Menus



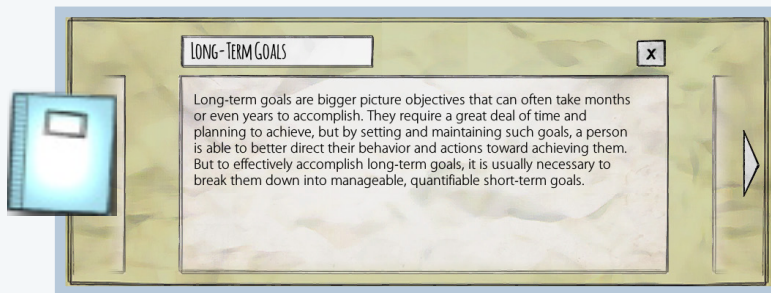
**Options**—allows for volume adjustment and returning to the main menu



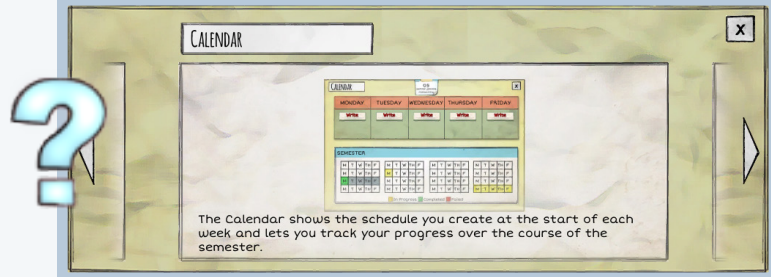
**Goal Log**—lists all current and completed goals



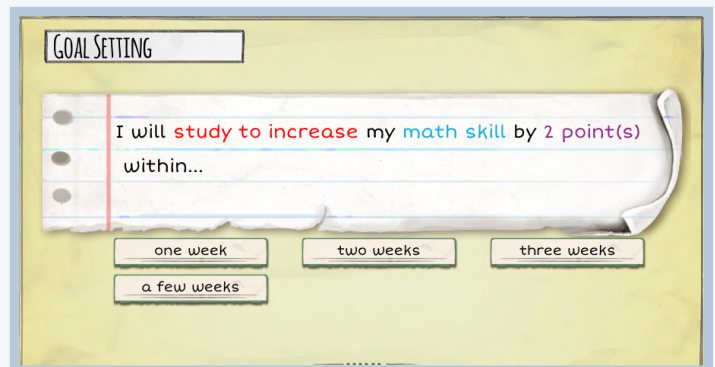
**Calendar**—lists the student's weekly schedule, shows where they are in the semester, and shows how many action points remain for the current week



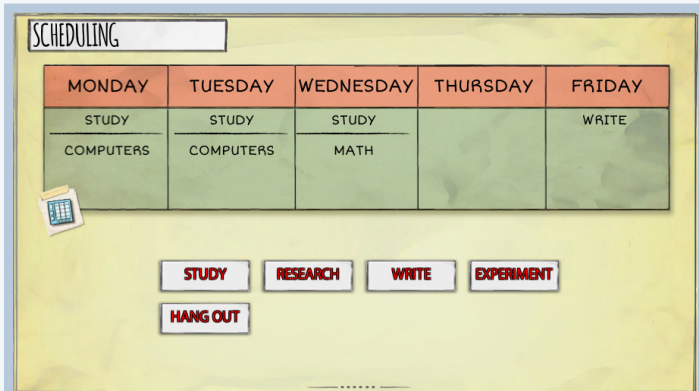
**Notebook**—contains all of the instructional concepts learned throughout the game



**Help**—displays information about the various menus and how to play the game



### Goal Setting and Scheduling



**Task Analysis**—shows the student’s overall schedule for the game (At the start of each week, students will be able to adjust this, based on the events of the previous week, to better meet their goals.)

**Goal Setting**—students will use this interface to create their short-term goals throughout the game

**Scheduling**—students will use this interface at the start of each week to create their weekly schedule



## CONTROLLING THE AVATAR

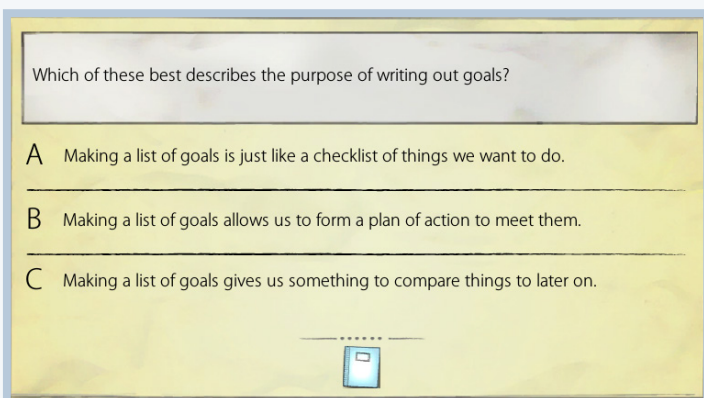
**Navigation:** To move around the game world, students can click where they want to go and the avatar will move there. To move between locations, the game uses warp points, which are indicated by highlighted, clickable doorways. Upon reaching the doorway, a new location will load with the player's avatar ready to explore it.

**Interaction:** To investigate objects or speak with other characters, students can click on them to bring up an interaction menu. While the menu for interacting with NPCs and the menu for interacting with objects look slightly different, they both function the exact same way. Students pick their responses to the on-screen dialogues from a short list and, and at certain points, choose if they will accomplish various actions.



**Actions:** Players complete actions to increase their skills and make progress toward their goals. Actions are always labeled, and a student cannot fail an action; however they do have a limited number of actions they can take each week and over the course of the game.

**Metacognitive Questions:** These questions are designed to test students' understanding of the concepts they have learned over the course of the game. Each one consists of a question and three possible answers. Answering correctly will grant students a hint point that can be used in their task analysis. Students must answer a metacognitive question any time they fail to meet a short-term goal or want to revise a short-term goal.



# THE CAST



**Hank:** McLarin Academy's groundskeeper and janitor, Hank has decided to better himself by enrolling in classes and signing up for the invention fair.



**Richard:** Richard is a bit arrogant and sees himself as superior to everyone else. He dreams of being the next great American playwright and sees the drama competition as his ticket to greatness.



**Cosima:** The hyper-intelligent classmate and long-time friend of our student, she has decided to craft an educational video game for the game design competition.



**Mrs. Torres:** The school's math teacher who has a passion for the theater, Mrs. Torres provides some mentoring for the drama competition and attempts to inspire the student as she works on her own play that attempts to mix math with drama.



**Professor Spero:** The eccentric professor and librarian acts as a mentor to all students. She is also in charge of the game design competition.



**Dr. Myers:** The curious, inquisitive science teacher and resident inventor of the academy offers mentoring for the invention fair when he's not working on his next great invention.



**Miguel Ruiz:** A little excitable but brilliant when it comes to mechanical engineering, Miguel seeks to design an amazing new invention to wow the judges of the invention fair.



**President Malloy:** The academy's president, who, feeling that the current generation appears aimless, has ordered McLarin's students to participate in the competitions, hoping to foster goal-setting and time-management skills.



**Mr. Ruiz:** A pragmatic man, Mr. Ruiz is proud of his son, Miguel, and his coffee shop. Though he may seem a bit stern, he secretly dreams of being an actor, a dream that may come true as a result of the drama competition.

# LEARNING EXTENSION ACTIVITIES

You can help students internalize and reinforce the key concepts from the game with the following activities:

## **Goal-Setting Activity**

Have a classroom discussion in which you explain and then give students examples of one of your long-term goals and list the short-term goals you need to reach it. Then, have students write down two educational goals and two personal goals of their own. After they have identified their goals, have them list steps they will need to take to accomplish each goal as well as any limitations or obstacles that could prevent them from reaching that goal.

As a class, choose a goal and then discuss ways of improving that goal using the S.M.A.R.T. Goal framework. Then have students break into groups to help each other revise at least one of their goals into a S.M.A.R.T. Goal. Have students share the before and after of one of their goals with the class.



## Time-Management Activity

As a whole class, discuss the things an average student does on a daily basis and then break those into time they must spend doing a necessary activity (e.g., time taken to eat, sleep, be in class) and time students have more control over (e.g., studying, practicing, hanging out with friends). Assuming they have a maximum of 24 hours to accomplish it all, assign an amount of time to each activity. Then, as a class, cross out items that are less important and circle items that are very important. Complete the activity by explaining time management to the class. The following text is one way of describing time management:

*Time management is when you have a set amount of time available, and you must organize that time by deciding what things you will do and when. In life, you will rarely have enough time to do everything you want to do, so you have to prioritize things to determine what is most important to accomplish and what can wait. That way you do as many of the things you want to do as possible in the time available.*

Using a S.M.A.R.T., short-term goal, discuss all the steps needed to accomplish that goal with the class and, based on the deadline, how much time they have to accomplish it.

Divide the class into groups, then give each group a calendar with a set number of hours available for them to use each day. Tell them they need to use the hours to schedule out the tasks on the list, based on their priority, to accomplish the short-term goal.

Have each group share their prioritized list with the whole class, and discuss the differences between groups.

Pick one of the schedules, then add an unexpected event. Discuss with the class how they would reprioritize everything following that event. Explain that sometimes the unexpected will interfere with their plans and, for that reason, they will always need to be flexible and able to reevaluate and adjust their plans. Have the students repeat the exercise with one of their own short-term goals.

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