



### *#GPAgoals – Lesson Plan*

**Grade Level:** 9 (or any grade that Algebra I is offered; particularly after first semester of 9<sup>th</sup> grade so students have an established GPA)

**Suggested Duration:** 2 hours or 2 class periods

**Target Audience:** Students who want to calculate the GPA they need to make during the remainder of high school in order to achieve a target GPA

**Video:** “How I Got Here: Dianey”

#### **§111.39. Algebra I**

(c) Knowledge and skills.

(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace

(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate

(E) create and use representations to organize, record, and communicate mathematical ideas

(F) analyze mathematical relationships to connect and communicate mathematical ideas

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication

*Dianey earned a full scholarship to attend college. Grade point average (GPA) is a major factor in determining scholarships and college admissions; in fact, many scholarship programs have GPA requirements. However, students often don't know how to calculate the GPA they need going forward to meet their goal GPA. In this lesson, students will derive and use a formula for goal GPAs.*

**Student Objective:** Students will derive, calculate, and apply goal GPA formulas.

**Lesson Preparation:** While preparing for this lesson with your students, make sure to watch the “How I Got Here: Dianey” video first. The video will provide guidance on how to navigate the lesson with your students and highlight the key messages for them to take away. Additionally, if students will not have ready access to their GPAs and credit summaries in class, please ask them to bring this information to class or ask the registrar or counselor to provide it to students beforehand in preparation for the lesson. As a pre-lesson activity, educators may invite counselors to come to the class to share GPA information with students, including details on what courses do or do not count toward GPA and what “weighting” means.

**Educator Direction: (10 min)** Play the “How I Got Here: Dianey” video for your class. After watching the video, ask students how Dianey paid for college. Students will recall she was awarded a full scholarship to St. Edward’s University in Austin. Next, tell students that one of the main criteria colleges use for admissions and scholarships is GPA. As evidence, you may show them the Scholarships chart right here on the TXGU website, which summarizes various scholarship requirements: <http://www.texasgearup.com/dates-deadlines/scholarships>. While only three schools listed mention an actual GPA requirement (e.g., 2.7), many schools (such as Angelo State University, Concordia University, LeTourneau University, Our Lady of the Lake University, and University of Houston) mention more broadly that GPA is a criteria for scholarships.

(As an extension, students may wish to create their own student profile on the TXGU website and explore other tools and resources on the site. They can start by clicking the Sign Up button on the homepage.)

Next, focus on a specific scholarship—the Ella C. McFadden Scholarship at Texas Wesleyan University—that requires a 3.8 GPA. Ask students a real-life problem, whose solution relies on applying algebra.

Possible teacher dialogue (directed to students):

*Let’s focus on the Ella C. McFadden Scholarship at Texas Wesleyan University. Who can tell me what GPA is required to be considered for this scholarship? (3.8). Okay, now let’s say there’s a student named Rosie who wants, more than anything, to attend Texas Wesleyan University, a small private college in Fort Worth. Rosie loves the small class size, the strong business program, and her favorite teacher is a graduate of that school. But given her family’s financial situation, the only way she can attend is if she gets a scholarship.*

*She plans to apply to the Ella C. McFadden Scholarship, which requires a 3.8 GPA. **Rosie’s current GPA is 3.6. What GPA does she need to achieve and maintain going forward in order to have a 3.8 GPA by graduation?***

**(10 min)** Next, ask students how they would calculate the needed GPA. Give students two minutes in silence to think about it. At the end of two minutes, ask students to share their thoughts, and record them on the board. If no one has offered the input that additional information is needed, prompt students to come to the following conclusion:

*We need to know how many credits Rosie has earned already, and how many she needs going forward in order to solve this problem.*

Next, tell students to assume that Rosie just finished her freshman year. She has completed 7 credits, and she will earn 26 to graduate. Give students an additional two minutes to ponder the solution. *(Note: This two-minute pause provides an opportunity for students to engage higher-order thinking and display the initiative necessary for college-level work.)* After two minutes, ask students their thoughts and write answers on the board. You may need to scaffold the discussion to get students to develop a formula.

Possible teacher dialogue (directed to students):

*Okay, so let's think about this.*

- *First, what do we know about Rosie's GPA? (She has a 3.6 GPA, she has completed 7 out of 26 credits, and she wants to get a 3.8.)*
- *Second, what do we need to find out? (What GPA Rosie needs from now on to bring her GPA up to a 3.8 by graduation.)*
- *Okay, now let's just use our number sense to estimate. Raise your hand if you think Rosie will need to make at least a 3.8 going forward to graduate with a 3.8. Raise your hand if you think Rosie will need to make at least a 3.4 going forward to graduate with a 3.8. Raise your hand if you think Rosie will need to make at least a 4.0 going forward to graduate with a 3.8.*
- *So, what would our formula be to calculate the GPA Rosie needs going forward? Anyone have an idea?*

**(15 min)** If no one offers an idea, the class may derive the formula together. One correct formula you might teach is shown below, though there are different acceptable variations on this formula. If you prefer, teach one of those formulas instead.

$7/26=27\%$  of coursework is completed.

That means 73% of coursework remains.

$$(.27*3.6) + .73x = 3.8$$

$$.972 + .73x = 3.8$$

$$.73x = 3.8-.972$$

$$.73x = 2.828$$

$$x = 2.828/.73$$

$$x = 3.874$$

Rosie will need to make a 3.874 average going forward to graduate with a 3.8 GPA.

Next, give students variations on this problem to solve together as a class, such as:

- Charlie has a 2.7 GPA, has completed 8 out of 26 required credits, and wants to graduate with a 3.2. What does he need to make going forward to achieve a 3.2 GPA? (Answer: 3.42)
- Kim has a 2.0 GPA, has completed 20 out of 30 required credits, and wants to graduate with a 2.7. What does she need to make going forward to achieve a 2.7 GPA? (Answer: 4.10)

Next, pass out the #GPAGoals student handout. If needed, go through the example for Problem 1 (Josh), as demonstrated below.

Get College-Ready Skills

Pick Classes that Will Get You Into College

Write Your High School 4-year Plan

Get Involved In Your Community

**Are Your Grades Good Enough?**

A Quick Guide To Managing Homework

Five Skills You Will Need In College

Apply to College

## ARE YOUR GRADES GOOD ENOUGH?

Find out if your GPA will get you into the college of your choice

Trying to achieve a specific grade point average (GPA) to be considered for a specific college or to earn a scholarship? Use the tool below to calculate the grades you need in order to achieve your GPA goal.

**GPA Goal Calculator — Complete all 4 steps**

- Calculation period:  
To **calculate your potential GPA** at the end of a semester, enter the **total** number of credit hours you will have **earned** by the end of the semester. (e.g., 60, 74, 90).  
-OR-  
To **calculate your final cumulative GPA** for your degree or certificate, enter the **total** number of hours **required to graduate** or complete your program (e.g., 120, 150).  
-OR-  
To **calculate your GPA for your major**, enter the **total** number of credit hours required to graduate with your selected major or area of study (you may need to refer to your degree plan for this information) (e.g., 24, 28).
- What is your **GPA goal** at the end of the calculation period (e.g., 3.0, 3.5)?
- How many **credit hours** have you earned to date? Include **completed** credits only.
- What is your **current cumulative GPA** (e.g., 2.4, 3.2)?

**Calculate**

Note to students with **transfer credit hours**:  
If your school accepts transfer credit hours, but does not include transferred credit hours in its institutional GPA calculation, you may need to subtract those hours from Boxes 1 and 3 above to receive more accurate GPA goal results.

**A QUICK GUIDE TO MANAGING HOMEWORK**

PLAN FOR COLLEGE

PAY FOR COLLEGE

FIND A JOB

MANAGE YOUR MONEY

Google Custom Search

COUNSELOR RESOURCES

**EDGE** Learn how to prepare for the education and training that will get you your dream job.

## ARE YOUR GRADES GOOD ENOUGH?

Find out if your GPA will get you into the college of your choice

GPA Goal Calculator Results	
Current Cumulative GPA	2.20 for 8 credits earned
GPA Goal	3.50 at 30 credits.
GPA required in remaining 22 credit hours to achieve your goal GPA	You will need to average <b>3.97</b> to achieve your GPA goal of 3.5 when you reach 30 credits.

The calculator is for informational purposes only. It is intended to give you a required GPA goal estimate in order to help you plan your college career. It is not a guarantee for any particular results. You should speak to the academic and financial aid counselors at your school before making any choices about your college plans.

**Start Over**

**A QUICK GUIDE TO MANAGING HOMEWORK**

*Note: You may wish to explain to students that the formula above does not take into account that some credits do not count toward their GPA, so the formula may actually underestimate how well students have to do going forward to achieve their goal GPA. You may also wish to have an extension activity involving weighted GPAs.*

**(10 min)** Have students solve the handout problems 1-3 and provide individual help as needed.

In the second half of the lesson, you may check the answers together as a class using this online calculator from Texas Guaranteed: <http://www.aie.org/plan-for-college/get-college-ready-skills/are-your-grades-good-enough.cfm?>

The answer key to the student handout is below.

1. Josh will need to achieve a 3.97 GPA going forward in order to graduate with a 3.5 GPA.
2. Beatriz will need to achieve a 4.8 GPA going forward in order to graduate with a 4.0 GPA. (This GPA will not be attainable if her school operates on a 4.0 scale.)
3. Michael will need to achieve a 3.36 GPA going forward in order to graduate with a 2.4 GPA.

**(60 min)** Finally, as described in the handout, give students an opportunity to calculate their own GPA goals. Ask students to do the following:

1. Access their own GPA and credit summaries.
2. Go online to identify a scholarship they might be interested in or a college they want to attend. (If time is short, feel free to provide a curated set of scholarships or colleges that you have researched beforehand, and ask students to pick from the list for this exercise.) Find out the GPA requirements for colleges by Googling “Common Data Set” for the college they are researching, then looking up the GPAs for the enrolled freshman class in the “First-time, First-year Freshman Admission” section. Sometimes, colleges do not list GPAs for their entering freshmen in the Common Data Set, or they use automatic admission by rank. In that case, you may ask school counselors to provide information to students about what the GPA cutoff is for students in the top 7%, 10%, 25%, etc. This exercise would help students identify their goal GPA.
3. Calculate what GPA they need going forward to make their target GPA by graduation.

*Note: You may wish to alter the total credit hours needed to only go through junior year, which would be lower than the total credit hours needed through graduation, as many scholarship and college applications are due before senior year grades come out.*

4. Ask students to submit a paragraph describing the scholarship/college they are targeting, their current GPA, their target GPA, what GPA they need going forward to meet their target GPA, and what steps they will take to improve their GPA. As an extension, you and/or a counselor may work with students to break down their GPA by

individual classes. For example, if a student needs a 3.874 GPA going forward, what does that student need to get in each of their 7 or 8 classes? This would give students an opportunity to see the importance of *each* grade in *each* class.

**(15 min)** To close, ask students to reflect on the activity. Sample questions are:

- Did you learn anything that surprised you?
- Is your target GPA attainable?
- What will you need to do going forward to meet your GPA goals?