



A2 Achieve Research Project Plan for Gann

Note: *The contents of this document should be viewed only as suggestions. You can use them or toss them. Hopefully, they will help you brainstorm to create a research project that is uniquely yours.*

Exploring How Brief Meditation Affects People

Gann, this project makes sense for you because it sits at the intersection of science, psychology, human behavior, and systems, which are all areas you have already said interest you. It also gives you a chance to move beyond saying that you are interested in medicine or psychology and actually show how you approach a question, design a fair test, observe people, analyze information, and decide what the results do (and do not) mean. Your assessment specifically identified an independent science investigation as an important opportunity to strengthen your academic story.

The goal is not to “prove meditation works.” That conclusion is too broad for a short high school project. Your goal is to ask one narrow, answerable question about a particular type of meditation, a particular group of people, and one or two measurable outcomes.

For this project, you could define meditation as:

A five-minute guided breathing exercise in which participants are instructed to sit quietly, notice their breathing, and gently redirect their attention whenever their mind wanders.

Using the same definition, script, recording, length, and setting for every participant will make the project much stronger.

OPTION ONE: STUDENTS AND PEERS

Five Minutes Before the Bell

How Does Brief Guided Meditation Affect Stress and Focus in High School Students?

This is probably the most manageable option and the easiest to complete well in one to two months.

Central Research Question

How does a five-minute guided breathing meditation affect high school students’ self-reported stress and performance on a brief focus task compared with five minutes of quiet rest?

Why This Is a Strong Option

You would have access to the participant group, the project could be completed at school, and the results could address a real issue students experience: stress, distraction, and difficulty resetting during the school day.

The quiet-rest comparison is important. Without it, you would not know whether participants felt better because they meditated or simply because they were allowed to sit quietly for five minutes.

Possible Hypothesis

Students will report lower stress and perform slightly better on a brief focus task after guided meditation than after quiet rest.

A hypothesis is only a prediction. You are not trying to make the data agree with it.

Suggested Participants

Recruit approximately 24–40 students.

Participants could come from:

- One or two classes
- National Honor Society or Science National Honor Society
- Band
- Cross country
- Other school clubs

Participation should be voluntary. Students should not be identified by name in the data.

Basic Study Design

Each participant completes both conditions on different days:

Condition A: Guided meditation

Participants complete:

1. A brief pre-session stress and focus rating
2. Five minutes of guided breathing meditation
3. A post-session stress and focus rating
4. A two-minute focus task

Condition B: Quiet rest

Participants complete:

1. The same pre-session rating
2. Five minutes of quiet sitting without guided meditation
3. The same post-session rating
4. A comparable two-minute focus task

Half the participants should complete meditation first. The other half should complete quiet rest first. This helps prevent the order of the activities from influencing the results.

Information to Collect

Before each session:

- Current stress level from 1–10
- Current ability to focus from 1–10
- Approximate hours of sleep the night before
- Whether the participant has meditated before
- Whether the session occurs before or after a major test, presentation, or event

After each session:

- Current stress level from 1–10
- Current ability to focus from 1–10
- Focus-task score
- One optional sentence describing the experience

Possible Focus Tasks

The task needs to be simple, repeatable, and approved by the teacher sponsor. Possibilities include:

- Finding and circling a target letter within a page of mixed letters
- Identifying differences between two similar lists
- Completing a short symbol-matching exercise
- Recalling a short list of words after a timed viewing
- Completing a short teacher-created proofreading task

Two comparable versions should be created so students do not simply remember the answers during the second session.

What You Would Analyze

You could compare:

- Average change in stress after meditation
- Average change in stress after quiet rest
- Average change in focus after each condition
- Average focus-task score after each condition
- Whether students with prior meditation experience responded differently
- Whether lack of sleep appeared to affect the results

Possible Final Title

Five Minutes Before the Bell: A Comparison of Brief Guided Meditation and Quiet Rest Among High School Students

OPTION TWO: MULTIPLE AGE GROUPS

Does Age Change the Pause?

Comparing Responses to Brief Meditation Across Generations

This option is more ambitious and could become a memorable project, but it will require greater access to participants and more careful organization.

Central Research Question

Do people in different age groups report different changes in stress, mood, and focus after the same five-minute guided meditation?

Suggested Age Groups

Use broad groups rather than trying to analyze every age separately:

- Ages 13–17
- Ages 18–29
- Ages 30–49
- Ages 50–64

- Ages 65 and older

Aim for approximately 8–12 participants in each group. A smaller study could use four age groups with ten participants each.

Possible recruitment sources include:

- Students and older siblings
- Parents and family friends
- Teachers and school staff
- Church or community organizations
- Carnegie volunteers or supporters
- Grandparents and their friends

Basic Study Design

Every participant completes the same process:

1. Brief background questionnaire
2. Pre-session stress, mood, and focus ratings
3. Five-minute guided breathing meditation
4. Post-session ratings
5. Optional written response

To make the project stronger, participants could also complete five minutes of quiet rest on a separate day. However, the single-session version may be more realistic when recruiting several age groups.

Information to Collect

- Age group
- Prior meditation experience
- Current stress from 1–10
- Current mood from 1–10
- Current focus from 1–10
- Post-session stress, mood, and focus
- Whether the participant found the instructions easy to follow
- Whether the participant would voluntarily use the exercise again

Do not ask for diagnoses, medications, mental health history, or other private medical information.

Questions You Could Explore

- Which age group reported the largest change in stress?
- Which age group was most willing to try meditation again?
- Did people with prior experience respond differently?
- Did younger and older participants describe the experience differently?
- Were some age groups more distracted or uncomfortable with silence?
- Did age appear to matter, or did prior experience matter more?

Possible Hypothesis

All age groups will report some reduction in immediate stress, but older adults may report greater comfort with the activity while younger participants may report greater difficulty remaining focused.

Again, the data may not support that prediction, and that is completely acceptable.

Possible Final Title

Does Age Change the Pause? Self-Reported Responses to a Five-Minute Guided Meditation Across Age Groups

Important Limitation

A study like this cannot conclude that age causes a different response. Differences could also come from prior experience, lifestyle, daily stress, health, personality, or the particular people who volunteered.

Recognizing those limitations will make the project more credible, not less impressive.

OPTION THREE: CROSS COUNTRY AND ATHLETIC PERFORMANCE

Still Before Speed

Does Brief Meditation Affect Focus and Perceived Effort in Student Runners?

This is one of the most authentic options for you because it connects psychology and human performance to your experience as a cross-country runner and captain. Your running background, leadership, and interest in noticing how people perform under pressure already form an important part of your application story.

Central Research Question

Does completing five minutes of guided breathing before a standard running activity affect student runners' focus, pacing consistency, or perceived effort?

Suggested Participants

Recruit approximately 10–20 runners.

Do not create a new or unusually difficult workout for the study. Use an activity that is already safe, familiar, and approved by the coach and teacher sponsor.

Possible Study Design

Over six ordinary practice sessions:

- Three sessions begin with five minutes of guided meditation.
- Three sessions begin with the team's normal pre-run routine or five minutes of quiet rest.
- The same standard run, interval, or warmup is used whenever possible.

After each session, runners record:

- Pre-run stress
- Pre-run focus
- Post-run perceived effort
- Ability to maintain pace
- Overall focus during the run
- Whether they would use the technique before a race

If watches or timing equipment are already routinely used, you could compare pacing consistency. The project should not depend on expensive devices.

What You Would Analyze

- Whether runners felt more focused after meditation
- Whether perceived effort changed
- Whether pacing became more consistent
- Whether experienced runners responded differently from newer runners
- Whether meditation helped more on stressful or difficult practice days

Possible Final Title

Still Before Speed: The Relationship Between Brief Pre-Run Meditation, Focus, and Perceived Effort in Student Runners

Why This Could Stand Out

This does not feel like a random research topic selected only for an application. It connects your existing experience in endurance sports to psychology, physiology, decision-making, and human performance.

OPTION FOUR: MUSIC AND PERFORMANCE READINESS

Before the First Note

Can Brief Meditation Affect Focus and Performance Anxiety in Student Musicians?

This option connects your long-term band involvement, section leadership, and experience playing multiple instruments with your interest in psychology and human behavior.

Central Research Question

How does five minutes of guided breathing affect student musicians' self-reported focus and nervousness before performing a short musical selection?

Suggested Participants

Recruit approximately 12–24 band students.

Participants do not need to perform publicly. They could play individually for the teacher sponsor or complete the exercise during a sectional rehearsal.

Possible Study Design

Each musician performs two similar short selections on separate days:

Session One

- Rate nervousness and focus
- Complete five minutes of guided meditation
- Perform the assigned selection
- Rate focus and performance satisfaction afterward

Session Two

- Rate nervousness and focus
- Complete five minutes of quiet rest
- Perform a comparable selection
- Complete the same post-performance ratings

The teacher sponsor or band director could use a simple rubric to evaluate:

- Accuracy
- Rhythm
- Tone
- Recovery after mistakes
- Overall preparedness

The evaluator should not be told which condition the student completed, when possible.

Possible Final Title

Before the First Note: Brief Meditation, Focus, and Performance Readiness Among Student Musicians

Why This Is Interesting

The project would allow you to examine the difference between how participants believed they performed and how an outside evaluator scored the performance. That creates a meaningful psychology question: does meditation change actual performance, perceived performance, or both?

OPTION FIVE: WHICH TYPE OF MEDITATION WORKS BEST FOR BEGINNERS?

One Size Does Not Fit Every Mind

Comparing Three Short Mental-Reset Techniques

This may be the strongest option for showing your interest in systems and human behavior. Instead of asking whether meditation is universally helpful, you would study which method people find most useful and easiest to continue.

Central Research Question

Which short mental-reset technique produces the greatest immediate improvement in stress and focus, and which are participants most willing to use again?

Three Conditions

Participants try each of the following on separate days:

1. **Breath counting:** Silently counting each breath from one to ten
2. **Guided body scan:** Directing attention gradually through different areas of the body
3. **Quiet rest:** Sitting without instructions or technology

A fourth option could be added:

4. **Guided visualization:** Imagining a calm or familiar setting

Suggested Participants

Recruit 20–30 students or a mixed-age group.

Each participant tries every technique. Rotate the order so everyone does not begin with the same one.

Information to Collect

Before and after each session:

- Stress from 1–10
- Focus from 1–10

- Mood from 1–10

After each technique:

- How easy was it to follow?
- How distracted were you?
- Did the five minutes feel short, appropriate, or too long?
- Would you use this technique again?
- Which technique would you choose during a stressful day?

Possible Research Angle

You might discover that the technique producing the largest immediate change is not the one people are most willing to continue. That creates an important human-systems question: an intervention cannot help people consistently if they dislike it or will not use it.

Possible Final Title

One Size Does Not Fit Every Mind: Comparing the Immediate Effects and Acceptability of Three Mental-Reset Techniques

OPTION SIX: EXPECTATION VERSUS EXPERIENCE

Do People Get What They Expect?

How Beliefs About Meditation Relate to Reported Results

This is the most psychology-focused option.

Central Research Question

Does a participant's expectation that meditation will help predict how much benefit the participant reports afterward?

Basic Study Design

Before the meditation, ask participants:

- How effective do you believe meditation is?
- How much do you expect this session to reduce your stress?
- Have you used meditation before?
- Do you generally enjoy quiet activities?

Afterward, collect the usual stress, focus, and mood ratings.

What You Would Explore

- Did people who expected meditation to help report greater improvement?
- Did skeptical participants still report changes?
- Did prior experience matter?
- Was actual focus-task performance connected to expectations, or only self-reported feelings?

Why This Is Strong

This moves beyond the simple question of whether meditation works and examines how belief, expectation, and experience interact. It also gives you an opportunity to discuss expectancy effects without pretending that a small high school study can fully explain them.

Possible Final Title

Do People Get What They Expect? Beliefs About Meditation and Self-Reported Responses to a Brief Guided Exercise

MY RECOMMENDATION FOR YOU

I would narrow these to three serious possibilities:

Best Overall Project

Five Minutes Before the Bell

This is the most realistic project to complete cleanly. It provides an accessible participant group, a comparison condition, measurable outcomes, and a direct connection to student wellness.

Most Distinctive Project for Your Application

Still Before Speed

This joins your academic interests with a real part of your life. It shows that you are not simply searching for something that sounds scientific; you are studying a question that grew from your own experience.

Most Intellectually Interesting Project

One Size Does Not Fit Every Mind

This option best reflects your interest in systems and psychology. It asks not only what may work but what people are likely to use, an important distinction in medicine, public health, and human behavior.

The multi-age project is also promising, but I would choose it only if you already have reliable access to enough participants in every age category. A smaller, carefully completed project is stronger than an ambitious project with inconsistent participation and incomplete data.

THE TEACHER SPONSOR'S ROLE

Your teacher sponsor should guide and verify the project, but the project must remain your work.

The sponsor should:

- Help you narrow the research question
- Review your background research
- Approve the meditation script and study procedures
- Determine what school or district permission is required
- Review participant and parent-permission materials
- Help protect participant privacy
- Observe or supervise data collection when appropriate
- Help you determine whether your comparisons are fair
- Review your analysis for obvious errors
- Confirm that the project was completed independently and ethically

You should ask a teacher who can speak to your intellectual curiosity and your ability to complete independent work. A science, psychology, statistics, health, or AP Physics teacher could make sense, depending on the final topic.

BASIC RESEARCH SAFEGUARDS

Before recruiting anyone, you and your sponsor need to confirm your school's rules. If the project is submitted to a science competition, publication, outside research program, or university, additional approval may be required before you begin collecting information.

At a minimum:

- Participation must be voluntary.
- Participants may stop at any time.
- Parent or guardian permission should be obtained when required for minors.
- Do not collect names in the research spreadsheet.
- Assign each participant a number or code.
- Do not ask about diagnoses, medications, therapy, trauma, or private medical history.
- Do not describe the project as treatment for anxiety, depression, or another condition.
- Do not promise that meditation will help.
- Store forms and results securely.
- Report group results rather than identifying individual participants.
- Use neutral language during every session.
- Tell participants that the activity is for a student research project, not medical care.

SIX- TO EIGHT-WEEK PROJECT SCHEDULE

Week One: Select and Narrow

- Choose one project option.
- Identify the teacher sponsor.
- Write the research question.
- Decide what "meditation" means in this study.
- Determine the participant group.
- Confirm whether the school will allow the project.

Week Two: Background Research

Find approximately five to eight credible sources addressing:

- Brief meditation or guided breathing
- Stress and attention
- The population you plan to study
- Self-reported versus objective measurements
- Limitations of short-term studies

Create a source summary for each one:

- What did the researchers ask?
- Who participated?
- What did they measure?
- What did they find?
- What limitation should you remember?

Do not write five separate summaries and call that research. Use the sources to explain why your particular question is worth testing.

Week Three: Build the Study

Create:

- Final research question
- Hypothesis
- Participant instructions
- Meditation script or recording
- Quiet-rest instructions
- Pre- and post-session survey
- Focus task or performance rubric
- Consent and parent-permission forms
- Data spreadsheet

Pilot the full process with two or three people who will not be included in the final results. Ask:

- Were the instructions clear?
- Did the session actually last five minutes?
- Were any questions confusing?
- Did the focus task seem too easy or too difficult?
- How long did the entire process take?

Revise before recruiting the full group.

Weeks Four and Five: Collect Data

- Use the same location whenever possible.
- Keep the session length consistent.
- Use the same recorded instructions.
- Record the time of day.
- Avoid changing the process halfway through.
- Keep a research journal documenting what happened during every session.
- Record unexpected problems rather than hiding them.

Week Six: Analyze Results

Begin with straightforward analysis:

- Number of participants
- Average pre-session ratings
- Average post-session ratings
- Average amount of change
- Differences between conditions or groups
- Percentage who would use the technique again
- Common themes from written responses

Create clean charts showing the most important findings.

Advanced statistics are not necessary unless your teacher sponsor believes they are appropriate and you understand what they mean. Clear, honest analysis is more valuable than using a complicated test you cannot explain.

Week Seven: Write the Report

Suggested structure:

1. Title
2. Abstract
3. Introduction and background
4. Research question
5. Hypothesis
6. Participants
7. Methods
8. Results
9. Discussion
10. Limitations
11. Future research
12. Personal reflection
13. Sources

Week Eight: Revise and Present

Prepare:

- Final research paper
- One-page abstract
- Research poster
- Five- to seven-slide presentation
- Anonymized data table
- Research journal
- Teacher-sponsor verification
- Short personal reflection

WHAT COLLEGES SHOULD BE ABLE TO SEE

The final submission should show more than the answer to the research question. It should show how you think.

A strong project will demonstrate that you can:

- Turn a broad interest into a specific question
- Read and understand existing research
- Build a reasonable method
- Treat participants responsibly
- Organize information
- Find patterns without exaggerating them
- Recognize weaknesses in your own project
- Change your thinking when the evidence does not match your prediction
- Identify a stronger question for future study

That final point matters. The strongest conclusion may not be, "Meditation reduced stress." It may be something more honest and interesting, such as:

- Quiet rest and guided meditation produced similar results.
- Participants felt calmer but did not perform better.

- Meditation affected perceived focus more than measurable focus.
- Prior beliefs predicted reported benefits.
- One technique worked best immediately, but another was more likely to be used again.
- Individual differences mattered more than age.

Your application positioning is already built around being someone who notices systems, studies how their parts interact, and acts on what you observe. This project can provide concrete evidence of that identity rather than simply describing it.