1) Have any data been collected for this study already?
It’s complicated. We have already collected some data but explain in Question 8 why readers may consider this a valid pre-registration nevertheless.

2) What’s the main question being asked or hypothesis being tested in this study?
Hypothesis #1: Dispositional mindfulness (time 1) will show a negative relationship with affective reactivity to boredom (time 2), controlling for average levels of boredom during learning (time 1) and time 1 levels of affective reactivity.
Hypothesis #2: Dispositional mindfulness (time 1) will show a positive relationship with academic diligence (time 2), controlling for average levels of boredom during learning (time 1) and time 1 levels of diligence.
Hypothesis #3: Affective reactivity to boredom (time 1) will show a negative relationship with academic diligence (time 2), controlling for average levels of boredom during learning (time 1) and time 1 levels of diligence.
Hypothesis #4: Affective reactivity to boredom (time 2) will mediate the relationship between dispositional mindfulness (time 1) and academic diligence (time 2), controlling for average levels of boredom during learning (time 1) and time 1 levels of affective reactivity and diligence.

3) Describe the key dependent variable(s) specifying how they will be measured.
There is one main independent variable (measured at both time 1 and time 2): Dispositional mindfulness. It will be assessed using the 14-item Mindful Attention Awareness Scale-Adolescent self-report scale (Brown et al., 2011).
There are two main dependent variables (measured at both time 1 and time 2): (1) Affective reactivity to boredom, and (2) academic diligence. Both measures will be assessed via self-report questionnaires. The affective reactivity to boredom scale (adapted from the Distress Tolerance Scale, Simons & Gaher, 2005) includes 11 items, rated from 1 = disagree strongly to 6 = agree strongly. The academic diligence scale (adapted from the Effort Regulation Subscale of the Motivated Strategies for Learning Questionnaire, Pintrich et al. 1991) includes 7 items, rated from 1 = not at all like me to 5 = completely like me.
There is one main covariate (measured at both time 1 and time 2): (1) Average boredom during learning. This measure is assessed using a single self-report item, “In general, how much does homework make you feel bored?,” rated from 1 = not at all to 5 = an extreme amount.

4) How many and which conditions will participants be assigned to?
This analysis represents a longitudinal follow-up of a prior preregistered analysis plan examining the same hypotheses in a single time point data set (#9791). This plan capitalizes on a three-month follow-up assessment with participants from the initial plan. However, participants in this study will be randomly assigned to one of three experimental conditions (to be explained in a subsequent preregistration plan). For our purposes here, we will focus on the subset of participants who are randomly assigned to complete the same survey as time 1 (from #9791).

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
For Hypotheses #1-3, we will first run bivariate correlations among the variables. Next, we will fit 3 separate linear regression analyses (one for each hypothesis), all controlling for the effect of the covariates on the dependent variable.
For Hypothesis #4, we will fit an indirect effect model with 5,000 bootstrapped samples, with dispositional mindfulness (time 1) as the independent variable, affective reactivity to boredom (time 2) as the mediator, academic diligence (time 2) as the dependent variable, and average levels of boredom during learning as the covariate (time 1; on both the mediator and independent variable). We will also control for time 1 levels of the mediator and the dependent variable.
A second mediation model will be used to test Hypothesis #4. We will fit a series of joint regression analyses: (1) testing whether dispositional mindfulness (time 1) predicts affective reactivity (time 2), controlling for time 1 affective reactivity and boredom during learning, and (2) testing whether affective reactivity (time 1) predicts diligence (time 2), controlling for time 1 diligence and boredom during learning. Joint significance of analysis (1) and (2) will be another way to infer mediation.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
Outlier values (defined as values +/- 3.29 SD from the mean) on dispositional mindfulness, affective reactivity to boredom, and academic diligence at both time points will be set to -3.29 or +3.29 SD from the mean, respectively.
As a general rule, no participant will be removed from analysis as long as they provide at least partial data on at least one key variable described above in Section 1.
Participants with missing data will be retained using full-information maximum likelihood.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.
Our sample will include 9th and 11th grade students from 3 public high schools. Approximately 1/3 of participants who completed a survey in January 2018 (N=850) will be randomly assigned to complete the same survey at time 2 (April 2018), for a total of approximately 250-300 students. The final sample size will reflect the maximum number of students who were available for testing (and whose parents did not opt them out) within the allotted time provided by each of the 3 high schools. There will be no stopping rule for data collection.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)
This project represents a valid pre-registration because it involves a longitudinal follow-up of an original survey collected in January 2018. None of the data for this longitudinal pre-registration plan have been collected.

Follow-up analyses may include additional demographic covariates (e.g., gender, race/ethnicity, grade level) if these variables are found to be associated with the independent variable, mediator, and outcome.

Follow-up analyses may also include additional covariates of utility value of homework, intrinsic value of homework, and expectancy beliefs of homework (all assessed via a single-item, self-report question).

Finally, follow-up analyses will test each of the 4 hypotheses using a shorter 6-item version of the affective reactivity to boredom scale.