

Tsunami Bowl coach handbook

Introduction to National Ocean Sciences Bowl:

The National Ocean Sciences Bowl (NOSB) is a way for students to learn about the ocean and issues surrounding the ocean in a format that is both enjoyable and competitive. Students work cooperatively to develop written and oral presentations and participate in a fast-paced buzzer game that showcases knowledge and team effort. Students also have opportunities to meet with scientists and conduct hands-on activities that they can find in no other setting.

There is no single best approach to preparing teams and working with students; this handbook provides strategies that you can use and is a guide. No matter what approach you take - just remember the goal - educating students (and others) about the ocean and the role the ocean plays in our lives.

The NOSB's focus on ocean science education is important. Humans rely on a healthy ocean for oxygen, resources, jobs, and more. Our future leaders must be knowledgeable about ocean issues. The ocean is an ideal interdisciplinary teaching tool for science, technology, engineering, and mathematics (STEM) that puts study in a real world context. Working in the ocean environment poses challenges that push the innovation, engineering, and technology development needed in our workforce. NOSB is one way students gain exposure to all of ocean science and related careers as they are beginning to chart their course in life.

NOSB is a timed competition (using "lock-out" type buzzer systems and clocks) between two teams of 4-5 students. Rounds consist of two 6-minute buzzer segments where toss-up questions are paired with an equal number of bonus questions, and two Team Challenge Questions (TCQs).

Toss-up questions are answered by individual team members without collaboration. A team that correctly responds to a toss-up question is given a short answer bonus question to answer as a team. Between buzzer segments, TCQs are provided in written form and require teamwork and extra time (2-5 minutes per TCQ) to complete. Unlike the toss-up and bonus questions, both teams answer each TCQ and win points for their correct responses. Competitions consist of approximately 11 rounds including tie-breakers, as necessary.

Introduction to the Alaska Tsunami Bowl:

Each year, Alaska holds a regional ocean sciences competition as part of the National Ocean Sciences Bowl (NOSB). A unique aspect of the Alaska regional NOSB is the research component of the competition, in which teams of four or five students prepare a research paper that is submitted in December, and present an oral presentation at the Tsunami Bowl in February. The research project score is combined with the results from a Round Robin quiz competition, where teams of four students, plus an optional alternate, compete against each other in timed quiz matches. These two components determine a team's seeding in the final elimination brackets of the quiz competition. The results of the elimination brackets determine a team's final standing in the Tsunami Bowl.

In the quiz competition, students must be the first to "buzz-in" for the opportunity to answer a multiple-choice or short-answer question. The game is organized as a series of matches in a round-robin/multilevel-elimination format. In each match, two teams compete against each other and the

clock, trying to be the fastest to answer the toss-up questions. Team challenge questions, more complex questions which require critical analysis and written answers, test students' critical thinking skills.

For the research project, students must prepare an in-depth research document on a specific ocean-related question or problem and must give an oral presentation on their work. Each component is judged by a panel of scientists. The project (like success in ocean sciences) requires an interdisciplinary team effort, the ability to assimilate and prioritize large quantities of often-conflicting results, and the ability to persuasively communicate the results and benefits of the research.

Teams receive the topic for their research project each September. The paper is due December 1 and the oral presentation is given at the Tsunami Bowl which is held in Seward each February.

The NOSB is sponsored by the Consortium for Ocean Leadership, a Washington, DC-based nonprofit organization that represents 89 of the leading public and private ocean research education institutions, aquaria and industry; working to advance research, education and sound ocean policy. The Alaska regional competition is hosted by the University of Alaska Fairbanks School of Fisheries and Ocean Sciences, with additional support from various marine-related government agencies, private businesses, and individuals. Phyllis Shoemaker (phyllis.shoemaker@alaska.edu) is the coordinator of the Alaska competition. Please contact her with any questions or suggestions you have regarding the Alaska competition.

Suggestions to recruit & retain team members:

1. Contact other teachers to identify competitive, bright, hardworking students that also have an interest in science.
2. Start with freshmen and build a second JV (or B) team. The JV team should go everywhere, even to the competition with the Varsity (or A) Team.
3. Personally invite a student to participate. A personal invitation goes a long way!
4. Ask the team for suggestions on who (in the lower grades) should be invited to participate.
5. Teams that excel usually have one or more students on their team that are exceptional across a variety of disciplines.

Reality check: Students don't always have time or the desire to be involved in just one activity. A program like this is a resume builder and high achievers want to enhance their resumes in many directions, so be prepared that sharing these students' available time with other programs/activities. For example if you have 12 students in the program you will likely have an average of 7 showing up each day – students have a lot of other responsibilities.

6. Cater to Different Learning Styles
7. Take students out of the classroom and on FIELD TRIPS where the learning process is more hands-on.
8. Encourage as much interaction with scientists as possible- provide other learning opportunities besides studying a textbook.

9. Incorporate field trips, site/lab visits, hands-on work into preparation process.
10. Bring in presenters, view videos or go to lecture series that provide higher level presentations.
 - Contact your local college or university about opportunities for students to sit in on presentations
 - Contact local research facilities and invite scientists to present on their research to your team/class.
11. Remember your ultimate goal:
 - To encourage students to enter the ocean science field
 - Focus on LEARNING & having FUN, not winning!
12. Set small goals for your team, (e.g. winning 3 rounds in a row, beating an undefeated team once) rather than focusing on trying to win the whole competition.
13. Foster good relationships within the team and between the coach and team.
 - Make the students feel they a part of something bigger than themselves, this keeps them invested and inspires them not to give up.
 - Model and enforce respect on your team- NOSB may attract students that don't always fit in to traditional extracurricular activities like sports; make sure practice is a safe, welcoming place for them
14. Maintain contact with NOSB alumni.
 - Ask alumni to present at a school function about their experience.
15. Encourage the parents to get involved. Parents should be encouraged to attend the regional competitions.

Team Preparation Suggestions:

Make an agenda or study schedule during your first meeting.

Initially, practice times may be short, but as the competition nears you may want to schedule more intensive practices.

Establishing the same day and time every week for a practice session is usually the most efficient way to handle many conflicting schedules.

An hour meeting might be broken up with 30 minutes of review of the subject for the week, and 30 minutes of knowledge games.

Involve the students in the establishment of realistic goals for the team in this competition year. Celebrate and document these goals in posters and team practice sessions.

Students should be encouraged to write their own questions and exchange them amongst teams or even between schools.

Questions can be posted on the NOSB Facebook page (students need to become fans) to share/swap with other teams, or added to the online Ocean Science Quiz Game.

Identify key strengths of each team member- e.g. biology, geology person. Team members divide up the workload and specialize in specific areas/topics.

Teach students generically how to understand ocean-science related graphs, tables, charts, diagrams, etc. – these often serve as the basis for TCQ's and they will need to know how to quickly interpret them

Encourage students to get out of their chairs and all write on the same paper during TCQ's – each student can work on a separate part of the question; have them practice doing this so they will be comfortable doing it during competition

Instruct the students to use a sheet of scrap paper during competition. They can write the letters "w,x,y,z" on the paper and place their pencil on the answer they think is correct as the question is being read. This will help them remember which answer went with which letter if they buzz in first.

Encourage students to read the science section of the newspaper and current ocean science periodicals. See the full resource guide on NOSB's website, or share examples of marine science in the news with them at the start of practice

Incorporate strategy into the preparation process:

Using the clock to your advantage: If your team is in the lead during the second half of the game, recognize that the clock is now your ally.

Using "Interrupts" to your advantage

Be sure the contest rules are understood and adhered to stringently

Break up subjects into subcategories and have each student do a presentation on a different topic. They should also develop a TCQ and 5 buzzer questions that their teammates need to answer based upon their presentation.

Request copies of marine science books from publishers or ask if you can view their online system. Most books and online resources come with a question database.

Don't miss out on the opportunity to scrimmage against another team, if offered. You can also arrange a public "scrimmage" between your team and group of local scientists or community dignitaries. This raises local awareness of your team and gives the students a big ego boost when they win.

Practice with a buzzer system if possible and simulate a "real" competition to get students comfortable before competition day.

Contact your RC to see if they are able to loan your school a buzzer system to practice.

Raise funds to purchase a buzzer system for your school.

Suggested Timeline for Preparation Process:

September – October

Play mini rounds – start practicing

Talk about ocean topics

Finalize the specific focus of the team's research project

Decide which team member will do which part of the paper

Develop first draft of paper and share with advisors for comments

Take a field trip the first week or two of school

November- December: prep becomes more serious

Run mock competitions using a buzzer system

Meet 2 to 3 times per week

Finalize and submit paper by December 1 deadline

Select the top students to sit on the A team. Determine the team through one-on-one competitions

After the holidays

Send in required participant forms

Practice every day.

Finalize and practice the oral presentation

Do the oral presentation for parents, teachers and members of the community

Make adjustments based on feedback from audience members

Example Schedule:

Week 1: Introductions/Fun meeting.

Week 2: Biology / choose research paper topic

Week 3: Chemistry / develop outline for research paper

Week 4: Physics / assign writing duties to each team member

Week 5: Technology / work on paper

Week 6: Marine Geology and Geography / finalize paper

THANKSGIVING BREAK

Week 7: Current Events, Marine Policy, and Social Sciences / submit final paper

Week 8: Review Rules and Strategies / develop outline for oral presentation

Week 9: Practice Competition / assign the development of visual aids

WINTER BREAK

Week 10: Biology and Chemistry / complete planning of oral presentation

Week 11: Physics and Technology / adjust timing of oral presentation
Week 12: Marine Geology and Geography / practice oral presentation
Week 13: Current Events, Marine Policy, and Social Sciences / give oral presentation to class mates, community members, parents and/or teachers
Week 14: Review Rules, Strategies, and 7 Disciplines / review feedback from audience members
Week 15: Practice Competition & oral presentation
Week 16: Practice Competition & oral presentation

Miscellaneous

Make sure the principal, other teachers and administrative staff at your school know that the NOSB Club is an active program and that you are the person in charge. Find out requirements for team travel and make all necessary arrangements for transportation and permission well in advance of the actual event.

Resources

NOSB Rules: <http://nosb.org/compete/>

NOSB General Resource Guide: <http://nosb.org/learn/resource-guide/>

NOSB Sample Questions: <http://nosb.org/learn/sample-questions/>

Tsunami Bowl Rules and information: <http://seagrant.uaf.edu/nosb/info/index.html>

Tsunami Bowl Practice Questions: <http://seagrant.uaf.edu/nosb/2011/practice-questions.html>