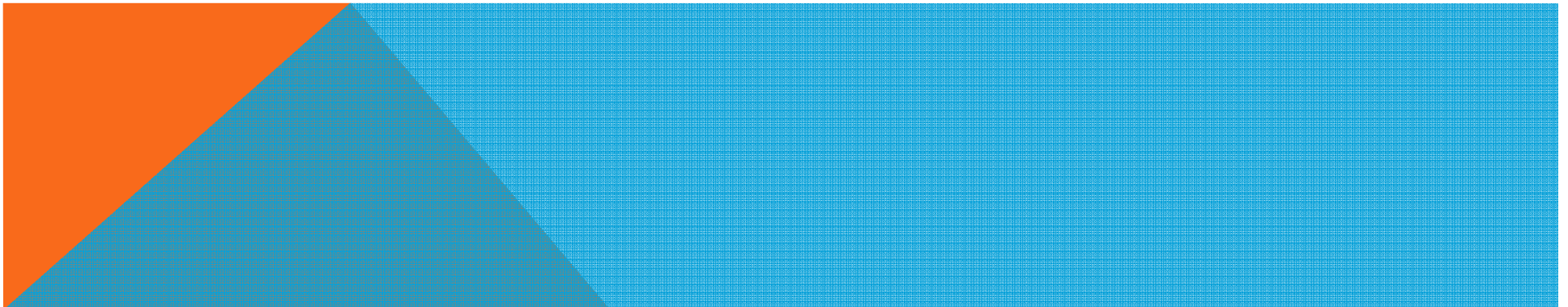
The background features a white triangular shape on the left side, with an orange triangle extending from its top-left corner. The rest of the background is a light blue color with a fine, grid-like texture. The text is positioned on the white triangle.

OPTICS

DECEMBER 14, 2011

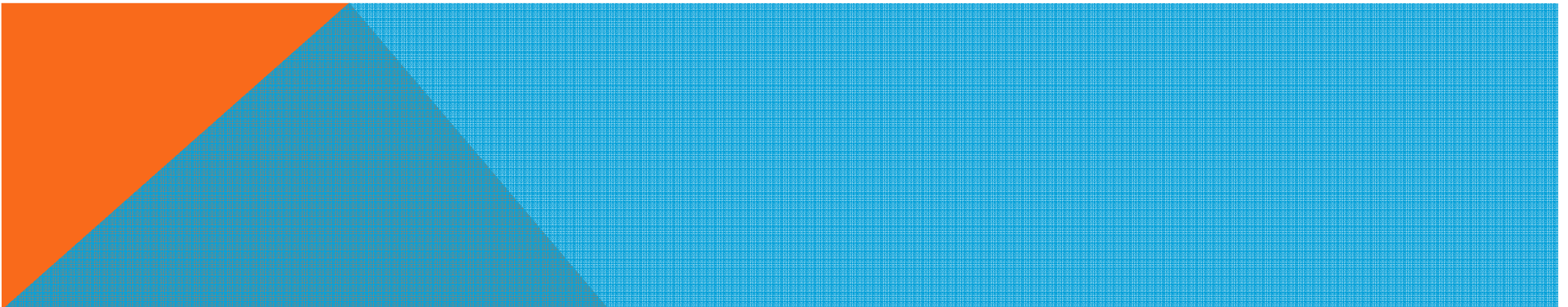
OVERVIEW

- **Event Overview**
- **General Preparation**
- **Event Specific Information**
- **Resources**
- **Q & A**



EVENT OVERVIEW

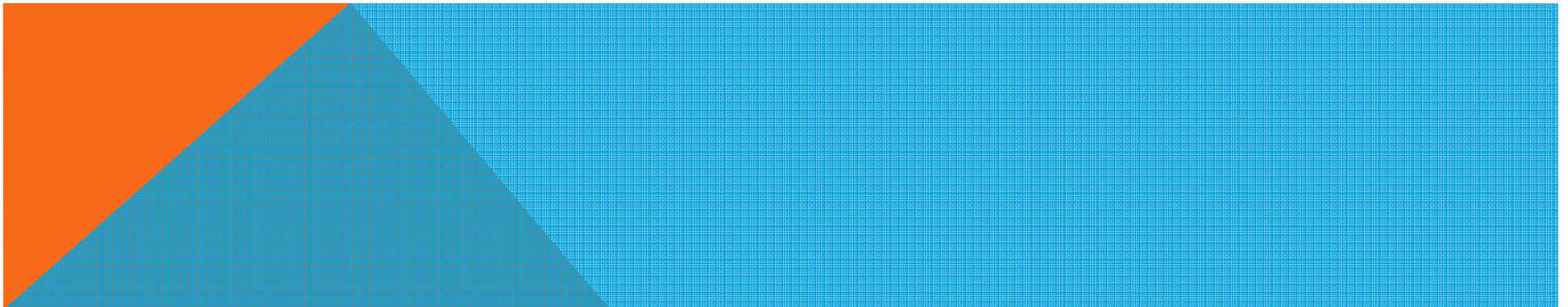
- **Description – “This event includes activities and questions related to geometric and physical optics.”**
- **Event will be run in stations with Laser Shoot being a “station”**



GENERAL PREPARATION

Resources

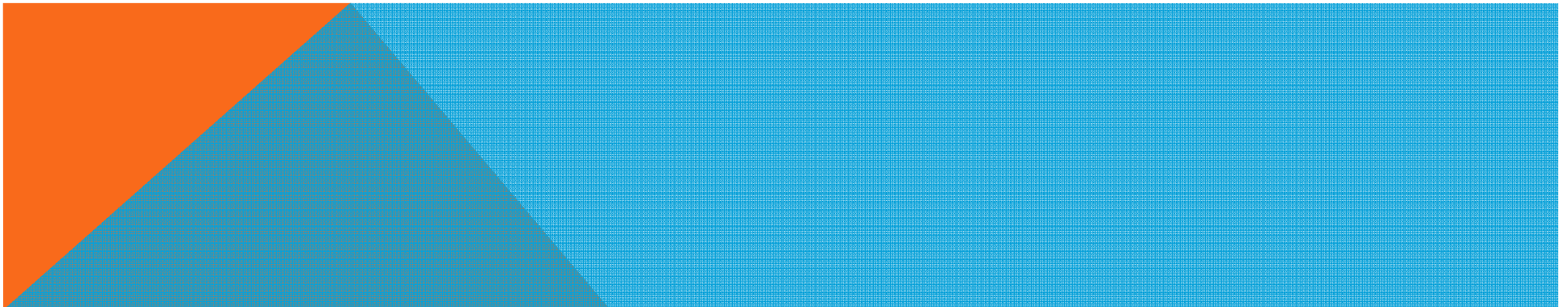
- Measuring Tools
 - Ruler
 - Protractor
 - String
- Premade Templates
- Writing Utensils
- Calculators
 - A basic Scientific Calculator will be sufficient
 - Smart Phones & portable devices (iPod Touch) will not be allowed
- Reference Materials
 - Must be punched and bound
 - Cannot be in pockets in the binder



EVENT SPECIFIC INFORMATION

Geometric Optics

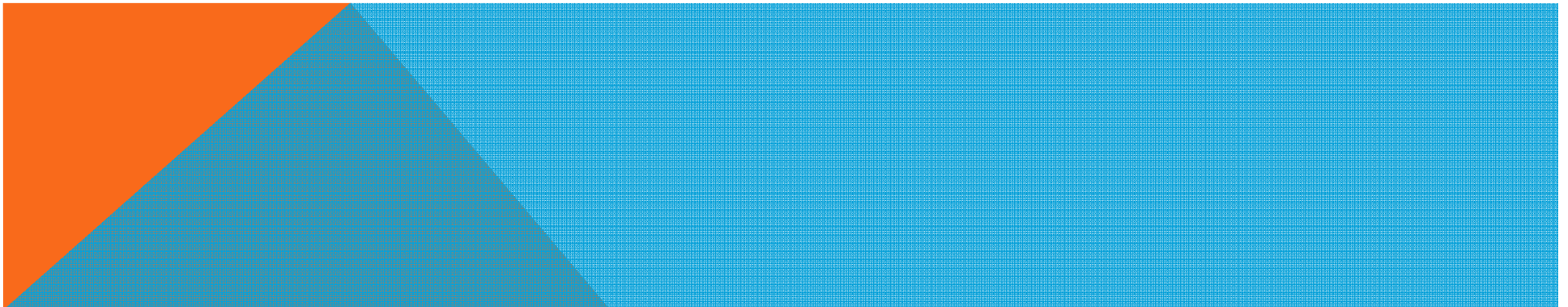
- Law of Reflection
- Refraction
 - C Division
 - Adds Snell's Law → Indices of Refraction will be provided
 - Adds Critical Angle
- Prisms
- Mirrors
- Lenses
 - C Division
 - Adds Thin Lens Equation
 - Adds Lens Maker's Equation
- Operating Principles of Optical Equipment



EVENT SPECIFIC INFORMATION

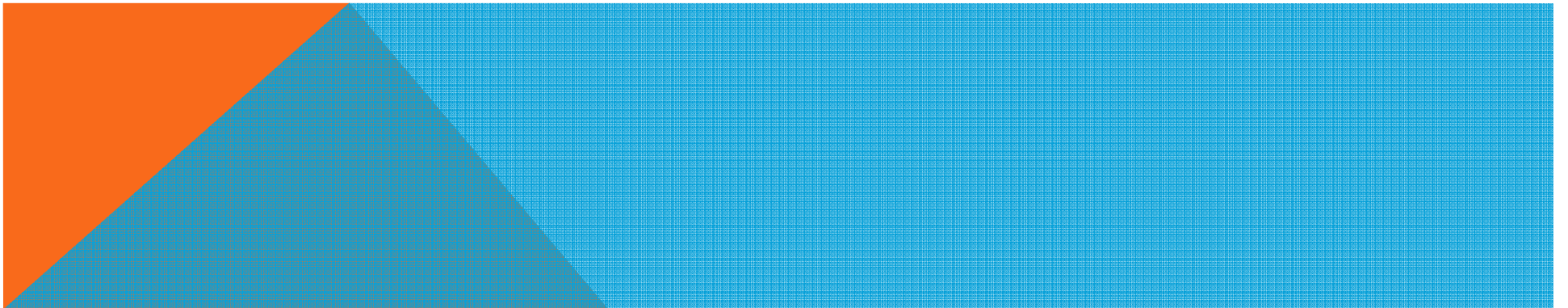
Physical Optics

- Visible Spectrum
- Structure and function of the parts of the human eye
- EM Spectrum
- Doppler Shift
- Bright Line and Absorption Spectra
- C Division Specific
 - Light Intensity
 - Energy and Momentum of photons



RESOURCES

- **High School and/or College Level Physics Text Book**
- **?**



Q & A

