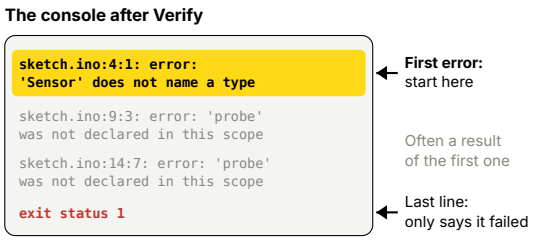
Arduino IDE compile error? 6 checks before the code

Verify fails and the console fills with red, before any upload. Before you change the code, check these six points in order. Valid for Arduino IDE 1.x and 2.x and for arduino-cli, with any board. If the sketch compiles but does not reach the board, see the lesson on upload failures instead.

Read the log, then the folders



Sensor is unknown, so probe is never declared and the next errors follow.

Example log. Fix the first error and compile again.

First error first: the compiler reports every line that fails, and many of them are a consequence of the first one.



Example names. Keep one copy and check the Used: line.

One copy per library: with two folders for the same header, the compiler picks one and the log tells you which.

Compile is not upload

This checklist covers Verify and Compile. Cable, port, driver and boot mode belong to the upload lesson.

Turn on verbose output

Preferences, "Show verbose output during" compile: the log then shows which folder each library and the board package come from.

Six checks, in this order

Check	What to do	Good result
1. First error	Scroll up to the first line with "error:" and fix that one first. Compile again before you look at the rest.	The other errors go away or change.
2. Include	"No such file or directory": install the library with the Library Manager, or check the spelling of the include, upper and lower case too.	The header is found.
3. Folder	One copy of each library, in sketchbook/libraries. With "Multiple libraries were found", check the Used: line.	Used: points to the copy you want.
4. Board	Select the board in Tools > Board: it sets the architecture. A library written for another architecture can fail.	No architecture warning in the log.
5. Board package	Install the core in the Boards Manager. Third-party boards: add their URL first in Preferences, "Additional boards manager URLs".	The board is listed in Tools > Board.
6. Versions	Core and library in versions that work together. From IDE 1.x to 2.x: same sketchbook location, URLs added again.	The same sketch compiles again.

What the console tells you

Message or symptom	Possible causes	Next step
fatal error: X.h: No such file or directory	Library not installed, include name misspelled or with different case (Linux distinguishes it).	Check 2.
Multiple libraries were found for "X.h"	Two copies; the Used: one can be the wrong one. Alone, it does not stop the compile.	Check 3.
WARNING: library … claims to run on … architecture(s)	Board of another architecture than the library supports.	Check 4.
Platform … not found: platform not installed	The board package of the selected board is not installed.	Check 5.
The board is not in Tools > Board	Core not installed, or the additional URL is missing.	Check 5.
Errors inside library files after an update	Core and library versions that do not work together.	Check 6: install the previous version.
Compiled in IDE 1.x, IDE 2 finds nothing	Different sketchbook location or additional URLs not carried over.	Check 6.

From the Arduino documentation

- The architectures field of library.properties gives a warning when the board's architecture is not on the list.
- The depends field can set the version of other libraries it needs.
- "Multiple libraries were found" alone does not make the compile fail: look for other errors later in the log.

Where the sketchbook is

By default, Documents\Arduino on Windows, Documents/Arduino on macOS and ~/Arduino on Linux.

The real path is in Preferences, "Sketchbook location". In arduino-cli it is directories.user.

If it has never compiled

- Compile File > Examples > 01.Basics > Blink with the same board: if it works, the board package is fine.
- Then compile the example of the library without changes.
- Only then go back to your sketch.

Before you remove a copy

Move the copy you do not use outside the sketchbook folder instead of deleting it, so you can go back.

Compile again and check the Used: line.

References: Arduino Help Center: If your sketch doesn't compile, Add libraries to Arduino IDE, Error: Multiple libraries were found, Find sketches, libraries, cores and other files, Add or remove third-party boards in Boards Manager; docs.arduino.cc: Arduino IDE 2 Board Manager and library tutorials, Arduino Library specification, arduino-cli sketch build process and configuration. The Arduino documentation and the manual of your board take precedence over this general guide.

Full lesson and details for your PLC range: **industrialshields.com/slides/slide/arduino-ide-compile-error-6-checks-before-the-code-951**