

Good Flag, Bad Flag: a design lab with pixels

Students play a pixelated flag quiz, discover which flags survive the blur, test the five classic flag design principles against the class's own data, then design a flag and run it through the same test.

AGES 11–16 · TIME 90 min (or 2 × 45) · SUBJECTS Geography · Art & Design · Social Studies / Civics · DEVICES optional

Learning objectives

By the end of the lesson students can:

- 1. Explain why some flags are recognisable at low resolution and others are not, using evidence from class data.
- 2. State the five principles of flag design and identify which principle a given flag breaks.
- 3. Describe at least two families of related flags (e.g. Pan-African colours, Nordic cross) and what the similarity signals.
- 4. Design an original flag that follows the principles and explain its symbolism in writing.

Materials

- **Classroom link** (same ten flags for everyone): <https://countryclue.online/?classroom=jp,ca,ch,br,td,ro,id,ml,tm,bz>
- Student worksheet (one per student) and rubric (one per student or displayed).
- Projector, or the *Printable pixel flags* PDF if the class has no devices.
- Video: Roman Mars, *Why city flags may be the worst-designed thing you've never noticed* (TED, 2015, ~18 min). https://www.ted.com/talks/roman_mars_why_city_flags_may_be_the_worst_designed_thing_you_ve_never_noticed
Minutes 0–8 cover the five principles.
- Reference: Ted Kaye, *Good Flag, Bad Flag* (NAVA, free PDF): <https://nava.org/good-flag-bad-flag>
- For Part 3: paper, pencils, coloured markers or crayons in basic colours, rulers. Optional: a camera or phone to photograph drafts and shrink them on the projector.

Before the lesson

- Open the classroom link once yourself and play the ten rounds (3 minutes). You will see exactly what students see.
- Decide how students will hand in results: the game ends with a *Copy results for teacher* button that produces ten short lines of text. A shared document, a form, or the class chat all work.
- Write the five principles on a hidden part of the board or a slide. Do not show them until Part 2.

Part 1 · Play (15 min)

Set-up (2 min). Hand out the worksheet. Explain the rules: a mystery flag appears heavily pixelated; you have six guesses; each wrong guess sharpens the flag and reveals a clue (continent, capital, population, neighbours, area). Type the country name — any of 15 languages is accepted.

Play (10 min). Students open the classroom link and play all ten rounds, recording for each round: the country, the guess number on which they got it (or X), and which clue helped. Tell them not to call out answers.

Submit (3 min). At the end, students press *Copy results for teacher* and paste into the shared document.

Paper alternative: project the printable PDF one flag at a time. Show level 1 (8 columns) for 20 seconds, take guesses by show of hands, then level 2, then level 3. Record the level at which most of the class recognised it.

Part 2 · Analyse (30 min)

Build the class table (8 min). On the board, list the ten countries in play order and write the class average guess number next to each. A quick method: ask "who got it on guess 1? guess 2? ..." and tally. Expected pattern:

#	COUNTRY	EXPECTED RESULT	WHY
1	Japan	guess 1	One shape, two colours. The benchmark.
2	Canada	guess 1–2	Leaf becomes a blob, but red–white–red proportions are unique.
3	Switzerland	guess 1	Survives any resolution.
4	Brazil	guess 1–2	Breaks "no lettering" yet the colour combination is unique — principles trade off.
5	Chad	guess 3–4 or X	Twin of Romania. Needs the continent clue.
6	Romania	guess 2–3	Twin of Chad. Students who lost round 5 now "know" the trick — and may still be wrong.
7	Indonesia	guess 3+ or X	Same as Monaco; Poland upside down. Too little information.

8	Mali	guess 3+	Guinea mirrored; Senegal with a star. Pan-African colours.
9	Turkmenistan	guess 4+ or X	Most complex national flag. Reads as green with a smudge.
10	Belize	guess 4+ or X	Coat of arms with figures and a motto — a "seal on a bedsheet".

Discuss (10 min). Ask students to propose rules that explain the table. Prompts:

- What do the guess-1 flags have in common? (Few colours, one big shape, nothing small.)
- Why did Chad and Romania take so long even though they are simple? (Simple is not enough — a flag must also be *different*.)
- Belize and Turkmenistan are full of detail. Did the detail help or hurt?
- Brazil has writing on it and still scored well. What saved it?
- Mali, Guinea and Senegal look alike. Is that a mistake? (No — the Pan-African colours are a deliberate statement of shared history.)

Write the class's rules on the board. Typically three or four of the five principles emerge in students' own words.

Watch (10 min). Show the first eight minutes of the Roman Mars TED talk (or read the five principles aloud from Kaye). Reveal the official list and match it against the class's list. Name each principle next to the flag in the table that demonstrates it.

Mini-lecture (2 min). The "one-inch test": Kaye suggests a flag should be recognisable when drawn one inch by one and a half inches, because that is how it looks on a pole from a distance. The pixelated game is the same test in digital form — the level at which the class recognised a flag is its score.

Part 3 • Design (45 min)

Brief (5 min). Design a flag for one of: your school, this class, your town or neighbourhood, a club or team you belong to. Constraints: follow all five principles; two or three basic colours; no words, no seals, no logos.

Thumbnail sketches (10 min). In the worksheet's three small "one-inch boxes", sketch three different ideas at tiny size first. This forces simplicity — anything that does not fit in the box will not survive the test.

Final flag (20 min). Choose one idea and draw it large (the worksheet box is 3:2; A5 or half a sheet also works). Fill shapes solidly. Then write three sentences: what each colour means, what each shape means, and why the layout is arranged as it is.

Pixel test (10 min). Hold flags up at the back of the room, or photograph them and shrink them on the projector. Classmates vote: "I know whose flag that is / I know what place it's for." The flag recognised by the most students wins. Point out that "most recognisable" and "best designed" turned out to be the same thing — that is the whole lesson.

Assessment

Use the rubric (separate PDF): principles (4), symbolism write-up (4), pixel-test peer vote (4), craft (4) — 16 points. The worksheet's data table and analysis answers can be marked for completion.

Differentiation

- **Support:** provide the five principles before Part 2 as a checklist; allow a two-colour, one-shape design; pair students for the analysis.
- **Stretch:** require a deliberately *related* design (e.g. a flag for a district that visibly belongs to the town's flag family); ask for a redesign of a real "seal on a bedsheet" flag with a before/after justification; have students compute mean and range of guess numbers and plot them against number of colours.
- **Language learners:** the game accepts answers in 15 languages, so students can play in their first language while discussing in English.

Extensions

- **Flag families as history.** Pan-African, Pan-Arab and Pan-Slavic colours; the Nordic cross; Union Jack cantons (Australia, New Zealand, Fiji); Liberia and the United States. Each family is one story of decolonisation, migration or alliance.
- **Flag changes.** New Zealand's 2015–16 referendums; Mississippi 2020; Canada 1965; Libya 2011; South Africa 1994. What prompted the change, and did the new flag follow the principles?
- **Computer science.** Why does 13 columns keep Japan but destroy Belize? Resolution, information and what a pixel throws away.
- **Modern languages.** Run the same ten rounds with students answering in the target language.

Standards

US. National Core Arts Standards (Visual Arts): VA:Cr1.1, VA:Cr2.1, VA:Re7.1. NCSS C3 Framework: D2.Geo.4, D2.Civ.14.

England. KS3 Art & Design (produce creative work; evaluate and analyse); KS3 Geography (place, identity, locational knowledge).

IB MYP. Design criteria A–D; Individuals & Societies key concept "identity and relationships".

Sources and further reading

- Ted Kaye, *Good Flag, Bad Flag: How to Design a Great Flag*, North American Vexillological Association, 2006. <https://nava.org/good-flag-bad-flag>
- Roman Mars, "Why city flags may be the worst-designed thing you've never noticed", TED, 2015. https://www.ted.com/talks/roman_mars_why_city_flags_may_be_the_worst_designed_thing_you_ve_never_noticed
- Flags of the World, <https://www.crwflags.com/fotw/flags/> for the history of any individual flag.
- CountryClue: the game, the classroom link builder and these materials at countryclue.online/classroom/flag-design/

Written by Tim White, CountryClue. Questions, corrections and classroom reports: tim@countryclue.online

These materials are free to copy, print and adapt for teaching. Attribution appreciated: "CountryClue Classroom, countryclue.online". Flag images are the official designs rendered from open data.