

01-13 Lecture: Computer Technology Flowcharts, AI Image Analysis, and diagrams.net Project Workflow

Date Time: 2026-01-13 08:53:03

Location: Highland High School

Instructor: Burkhard

Summary

On 2026-01-13, the instructor led a Computer Technology session combining flowchart instruction, AI image analysis, and a multi-part diagrams.net project with firm end-of-class deadlines and an extended grading window to the evening of 2026-01-14. Flowcharts were taught as a clear visual language emphasizing yes/no decisions, actions, loops, and non-crossing arrows, demonstrated through humorous, practical examples like “Puking 101” and navigating a daily class routine. Students practiced identifying AI-generated image artifacts using a prior “cafe” critique and prepared for a similar “Holding Mom” analysis. The work period focused on completing four diagrams: favorite things, a basic schedule, a candy tier list in a specified format, and a company profile built from a selected favorite, with strict saving/exporting procedures to Google Drive. The instructor reinforced classroom norms, time management, and long-term project planning, including a forthcoming survey and graphing unit, and discussed tools and cost considerations for AI platforms (Gemini vs. ChatGPT), with technical guidance and pragmatic extensions to accommodate progress loss.

Knowledge Points

1. Flowcharts: Concepts, Symbols, and Rules

- Purpose: Present processes clearly; “king of charts” for decision-making and sequencing.
- Symbols:
 - Start/End: Green circle for start; red circle used to mark conclusion in examples.
 - Decision: Yellow diamond (kite shape), must be yes/no.
 - Action/Command: Blue square for imperative steps (“Drink Pepto, wait 20 minutes”).
- Arrows and layout:

- Directional flow from node to node; avoid crossing arrows to prevent ambiguity.
 - Branch labels must clearly indicate Yes/No outcomes.
- Example: “Puking 101”
 - Initial decision: “Did you eat or drink something bad?”
 - Branching through “Do you feel sick?”, “Really sick?”, “Do you have Pepto-Bismol?”, with action steps and iterative loops (kneel, wait, check “Did you throw up?” / “Are you feeling better?”) leading to multiple end states.
 - Humor and medical disclaimer: illustrative only, not medical advice.
- Class routine flowchart:
 - Decisions like “Do you have comp tech class today?”, “Can you ditch?”, seat checks, bell ringer, work loop until bell, multiple relaxed endings when appropriate.

2. AI Image Analysis: “Cafe” Case and Upcoming “Holding Mom”

- Artifacts to spot:
 - Nonsensical text (napkin letters not resembling real languages).
 - Botanical errors (peace lily with dead sticks inconsistent with species).
 - Ambiguous objects (plastic bag-like items that don’t fit context).
 - Unrealistic food compositions (excessive limes, incoherent dish components).
 - Anatomical anomalies (legs/limb positioning).
- Approach: Use common-sense observation over reverse image search for “Holding Mom.”

3. Diagrams.net Projects and Deliverables (50 points; due end of class 2026-01-13, graded by 2026-01-14 evening)

- Four required diagrams:
 - Problem 1: Favorite Things chart (fast execution; minimal styling).
 - Problem 2: Basic schedule diagram (three columns: Monday; Tuesday/Thursday; Wednesday/Friday; list class and teacher).
 - Problem 3: Candy Tier List:

- Format: S/A/B/C tiers (trash tier after C acceptable; omit D to simplify), student name/title atop, small item images in tier cells.
- Items: Two sets of 10 provided; select about 12 total (e.g., six from each set).
- Requirements: Title, tier explanations, resized images, tier variety (avoid all S).
- Example opinions: Skittles C, Nerds B/A, Swedish Fish trash, Butterfingers sticky, Tootsie Rolls disliked; soda substitution allowed if 12 items included.
- Problem 4: Company Profile from Favorite Things:
 - Include logo, founding year/date, headquarters location and image, address, website, leadership (CEO/president), and financial metrics (“how much money they make”).
 - Topic selection: Choose broadly relatable companies (Monster, Nike, Ford, Coca-Cola, Nissan); avoid hyper-local or non-school-appropriate topics.
 - Historical note: For pre-1940s companies, research WWII activities (e.g., Porsche’s wartime industrial roles).
 - Long-term use: Will support months of work (research, surveys, graphing); pick something genuinely interesting.
- Grading and deadlines:
 - Hard end-of-class deadline emphasized, with “slide time” extension to evening 2026-01-14; incomplete by then earns zero.
 - Missing the 50-point project risks a C/D/F depending on current grade; extra credit possible for some.

4. Workflow, Tools, and Technical Guidance

- Triage mode: Prioritize completion over aesthetics due to time loss; “throw in the pieces” and move on.
- diagrams.net/Google Drive:
 - Save/Export properly: File > Save As or File > Export; choose “Pick folder,” authorize Google Drive, verify files exist in CompTech folder.
 - JPEG export: File > Export as > JPEG; select all; name files clearly; confirm in Drive.

- Table manipulation: Arrange > Table > insert/delete columns/rows; resize elements for readability.
- Dual-monitor tip: Drag browser tabs to create two-display workspace.
- Image sourcing: Use Google Images; resize to fit tier cells; maintain labels for clarity.
- AI tools:
 - Gemini vs. ChatGPT: Instructor testing Gemini (file picker uploads work; drag-and-drop flaky), using image generation ("mouse on a motorcycle"); considering switching students next quarter to reduce cost and use integrated tools; unknown quotas to be clarified.

5. Classroom Expectations, Culture, and Logistics

- Engagement: Gather close to view small on-screen text; interactive demo; roster checks and pragmatic management of tardies and disruptions.
- Work time norms: Complete the thinking sheet, then projects; no goofing off; aim to pass.
- Motivation: Graduation and job prospects emphasized; flexibility offered for late arrivals and those needing point recovery within constraints.
- Music policy: Briefly set up a playlist, then stow phones; no TikTok/YouTube.
- Next class plan: Short lecture, notes, bell ringer, ~1 hour work time with instructor assistance.
- Additional items: Yearbook workspace and deadlines, noise-canceling headphones recommended; tech support (Bluetooth mouse pairing).

Assignments

- Complete the flowchart thinking sheet (4–5 minutes; 5 points) and apply conventions: start/end circles, yellow diamond decisions with yes/no branches, blue square actions, no crossing arrows.
- Finish the 50-point diagrams.net project (favorite things, schedule, tier list in specified format, company profile) by end of class on 2026-01-13; extended grading by 2026-01-14 evening; incomplete work earns zero.
- Export all diagrams as JPEG to your CompTech folder; verify in Google Drive; name files clearly.
- For the tier list, include at least 12 items, a title, tier explanations, resized images, and tier balance; follow the sample table format.
- Build the company diagram with logo, founding year/date, HQ location/image, address, website, leadership, and financials
- Prepare "Holding Mom" image analysis for Thursday; use observational skills rather than reverse image search.

- Begin or preview three instructional charts (e.g., lamp on/off with checks, morning routine, one of choice) using flowchart rules.
- Practice information literacy: verify sources; avoid unverified AI-generated content.
- Optional: If finished early, start the flowchart project posted and the bell ringer for next class.