CCM1: A Genetic Risk Linked to New Mexican Spanish Ancestry

Design Plan

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Needs Assessment

People of New Mexican Spanish descent are at significantly higher risk of cerebral cavernous malformations due to the CCM1 “Common Hispanic Mutation,” yet many affected individuals are unaware of the condition or misunderstand its implications. Informal stakeholder conversations and preliminary audience checks indicate that both healthcare providers and members of the public have fragmented or incomplete knowledge of CCM1. Barriers to awareness include limited access to healthcare in rural areas, lack of trust in genetic testing, and the fact that many individuals with the mutation may never develop symptoms.

The instructional gap exists between what learners currently know – often little or nothing about CCM1 – and what they need to know in order to make informed, self-directed decisions about family health awareness, medical conversations, and potential screening. The recommended solution is a brief, accessible, web-based microlesson that increases awareness without alarmism, supports interpretation of new information, and provides optional next steps for learners who wish to explore further.

Instructional Goal:

After completing this instructional unit, learners will be able to recognize CCM1 as a genetic risk associated with New Mexican Spanish ancestry and identify appropriate, optional next steps for increasing family health awareness and communicating with healthcare providers.

Performance Objectives:

After completing the interactive lesson, learners will be able to:

1. Explain, in general terms, what CCM1 is and why it is more common among people of New Mexican Spanish ancestry.

2. Interpret key information about CCM1 with appropriate nuance, recognizing uncertainty and variability in outcomes.

3. Reflect on personal readiness and context when considering responses to new health information.

4. Select one or more appropriate next steps for further learning or healthcare communication based on personal preference and circumstance.

Assessment of Learning Outcomes:

Learning outcomes will be assessed using informal, reflective assessments embedded throughout the instructional unit. These assessments emphasize understanding, interpretation, and self-directed decision-making rather than correctness or mastery.

Performance Objective	Assessment
1. Explain, in general terms, what CCM1 is and why it is more common among people of New Mexican Spanish ancestry.	Embedded knowledge checks within an interactive video (multiple choice and true/false questions with explanatory feedback)
2. Interpret key information about CCM1 with appropriate nuance, recognizing uncertainty and variability in outcomes.	Reflective interaction prompting learners to consider how the information feels clear, unclear, or uncertain to them
3. Reflect on personal readiness and context when considering responses to new health information.	Non-scored reflective prompts embedded in interactive activities
4. Select one or more appropriate next steps for further learning or healthcare communication based on personal preference and circumstance.	Branching scenario culminating in an optional checklist of next steps with expandable guidance

Learner Characteristics:

Target audience: Adults of New Mexican Spanish ancestry, including individuals with varied health literacy levels, healthcare access, and familiarity with genetic information.

Relevant learner characteristics and design implications include:

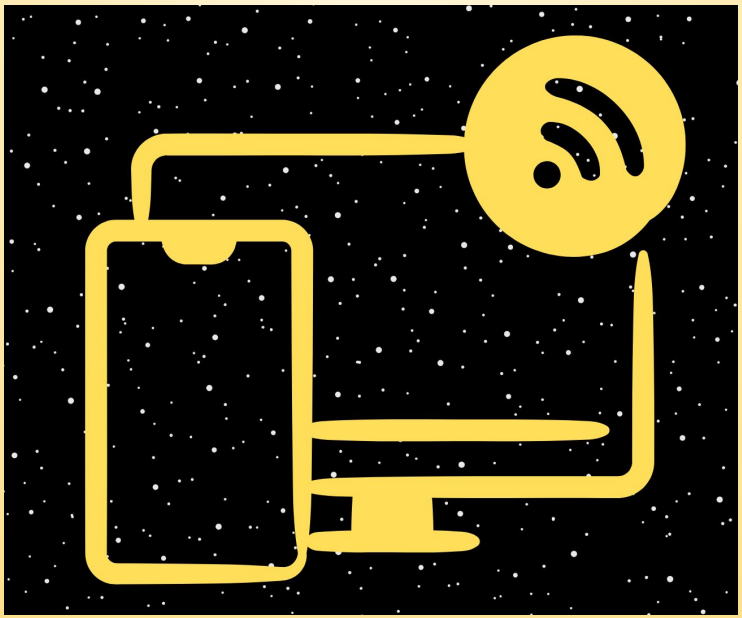
- **Limited prior knowledge:** Content is introduced gradually with opportunities for reflection rather than recall-based testing.

- **Potential anxiety around genetic information:** Instructional tone emphasizes choice, autonomy, and the legitimacy of uncertainty.

- **Self-directed participation:** Learners can complete the lesson independently and choose how deeply to engage with optional components.

Learning Context:

The instructional unit is designed for self-paced, informal learning in an online environment. Learners will access the lesson through a public Google Site embedding interactive H5P content hosted on a WordPress site. No login is required. The lesson can be completed in approximately ten minutes and is suitable for home or mobile access.



Training Module Outline:

The instructional unit follows a clear three-part structure, preceded by a short hook video.

Preceding Component: Hook Video (External)

A 1-2 minute video introduces CCM1, establishes relevance to New Mexican Spanish ancestry, and invites learners to continue to the interactive lesson.

Component 1: Interactive Video (4–5 minutes)

- Core instructional content delivered via interactive video
- Embedded knowledge checks to reinforce understanding
- Optional simple visual interactions when they add conceptual clarity

Training Module Outline (continued):

Component 2: Reflective Interpretation Activity

“How Does This Information Land for You?”

- A reflective, non-scored interaction that prompts learners to consider how clearly the information feels to them and where uncertainty remains

- Learners respond to interpretive statements using confidence-oriented options (e.g., “This makes sense to me,” “I’m unsure,” “I’d need more information”).

- Feedback provides nuance and context rather than correction, reinforcing that uncertainty is normal when learning about health topics.

Training Module Outline (continued):

Component 3: Branching Scenario and Optional Checklist

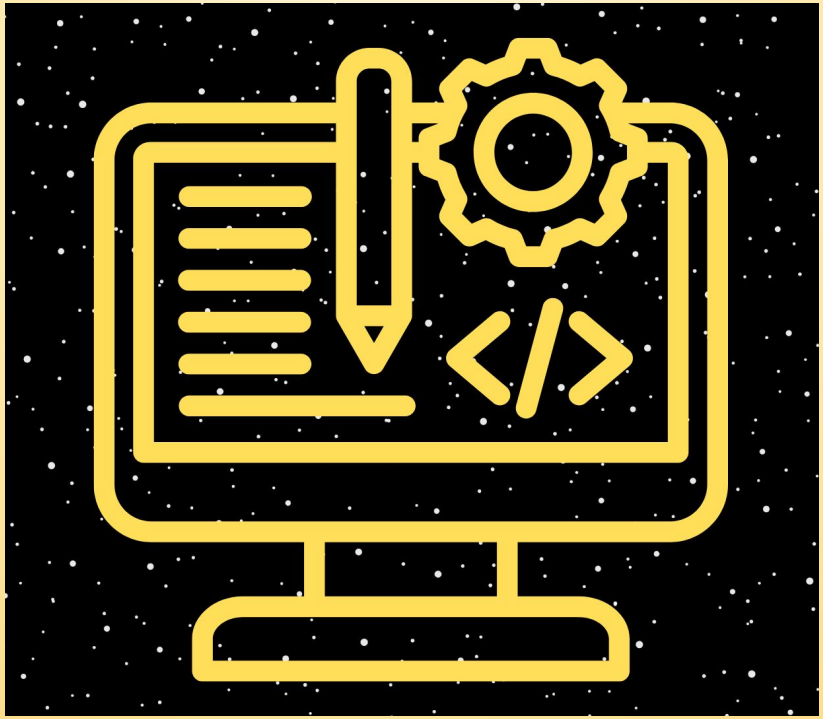
- A branching scenario presenting multiple realistic ways people respond after learning new health information
- All response paths are framed as reasonable and valid.
- The scenario leads to an optional checklist of next steps learners may choose from.
- Expandable or linked guidance provides additional information on genetic testing and communicating with healthcare providers.

Closing

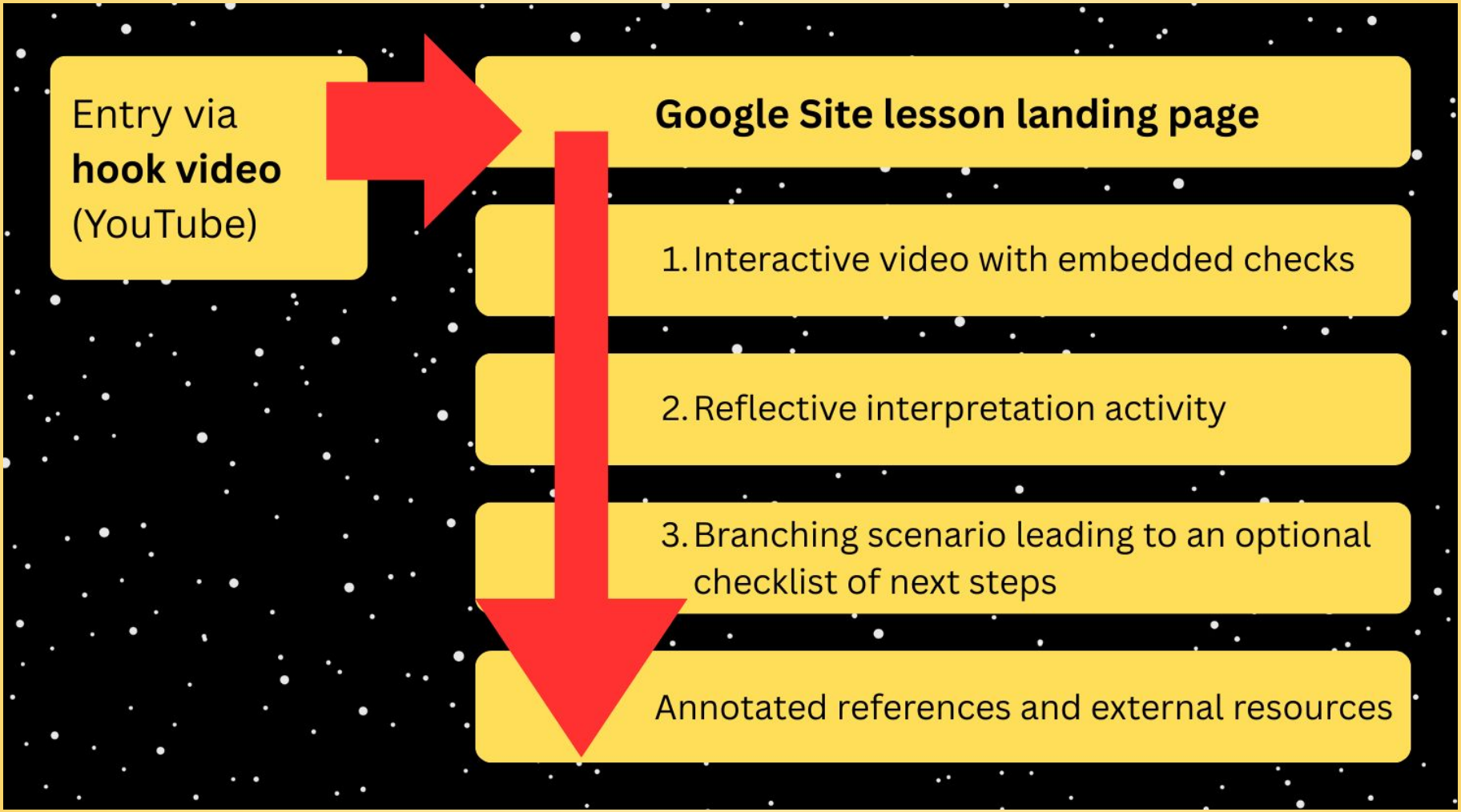
- An annotated references list with clearly labeled external resources for learners who wish to explore further

Instructional Resources:

Learners will need internet access and a web-enabled device. Instructional resources include a YouTube-hosted hook video, a WordPress site with H5P interactive content, a Google Site for lesson navigation, and external health and genetics resources linked in the references section.



Training Module Blueprint:



Formative Evaluation:

Because this instructional solution addresses a sensitive health topic intended for informal public outreach, formative evaluation will focus not only on accuracy but also on tone, usability, and learner experience. Two formative evaluation strategies will be employed: a peer review conducted by a healthcare professional and a small group evaluation conducted with members of the target audience.

(Continued on the next two slides.)

Formative Evaluation (continued):

Formative Evaluation Strategy #1: Peer Review by Healthcare Professional

The first formative evaluation will be a peer review conducted by Sabrina Bent, a Nurse Practitioner practicing in Albuquerque, New Mexico. Although Ms. Bent is not a subject matter expert in CCM1 or neurology, her professional healthcare background positions her well to evaluate the lesson's accuracy, tone, and appropriateness for public health outreach. Her experience with patient education and medical communication makes her an appropriate reviewer for this stage of development.

Ms. Bent will review the first full draft of the instructional unit, including the hook video, interactive lesson components, branching scenario, optional checklist, and references. She will complete the lesson as a learner and then respond to a structured questionnaire designed to elicit feedback on content clarity, accuracy, tone, balance between information and alarmism, and the appropriateness of guidance related to genetic testing and MRI screening. Her feedback will be used to make immediate revisions, particularly to wording, sequencing, and healthcare messaging.

Formative Evaluation (continued):

Formative Evaluation Strategy #2: Small Group Evaluation with Target Audience

Following revisions based on the peer review, a small group evaluation will be conducted with three to five individuals from the target audience: adults of New Mexican Spanish ancestry with no assumed prior knowledge of CCM1. Participants will complete the lesson independently and then respond to a feedback form tailored to non-expert learners.

This feedback will focus on clarity, usability, pacing, emotional tone, navigation, and the perceived usefulness of the branching scenario and optional checklist of next steps. The purpose of the small group evaluation is to identify any remaining barriers to understanding or ease of use. Feedback will be reviewed for common themes, and additional revisions will be made as needed, with particular attention to clarity and learner experience before finalizing the lesson for distribution.

Summary

This design plan outlines the development of a brief, web-based instructional module intended to increase awareness of CCM1 (Common Hispanic Mutation), a genetic risk disproportionately affecting people of New Mexican Spanish ancestry. The purpose of the module is to address a documented gap in public awareness by providing clear, accessible, and non-alarmist information about CCM1 in a format appropriate for informal health outreach. The training is designed for adult learners with varied health literacy and access to healthcare and emphasizes learner autonomy, respectful tone, and ethical communication around genetic risk.

The instructional goal of the module is to help learners recognize CCM1 as a relevant genetic risk and to support them in identifying optional next steps for family health awareness and healthcare communication, should they choose to pursue them. The lesson is structured as a short interactive experience consisting of an instructional video with embedded knowledge checks, a reflective interpretation activity that supports understanding and confidence rather than correctness, and a branching scenario that models realistic responses to new health information. The module concludes with an optional checklist of next steps and an annotated references list, allowing learners to decide how deeply they wish to engage beyond the lesson itself.