



USES OF AI

IN TEST DEVELOPMENT

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OBJECTIVES

- What is AI?
- What can it do?
- Potential Uses of AI in Test Development
- How do we get AI to do what we want? (effective prompts)
- How can we further leverage AI? (AI Bots)



I can't imagine why they ever thought we'd take their jobs away!



AI

Only way
to keep *AI*
from taking
your job is
to use *AI* to
do your job
better!

HOW OFTEN DO YOU USE
CHATGPT OR OTHER *AI TOOLS*
IN DEVELOPING TEST ITEMS?



ALWAYS

OFTEN

SOMETIMES

NEVER

What use **AAI**?

- Excellent at natural language
- Excellent language tool (developed and operated by humans) that helps in the performance of language-related tasks.
- Cognitive off-loading
- Here to stay!





Cognitive Off-Loading

“the use of physical action to alter the information processing requirements of a task so as to reduce cognitive demand”

(Risko & Gilbert, 2016, p. 677)

More Tools for *COGNITIVE OFF-LOADING*

AI



New Tool for *COGNITIVE OFF-LOADING*



Copilot



Chat GPT



Gemini

WHAT CAN AI DO?

GOOD AT

- Natural language
- Plausible content
- Verbosity
- Editing / generating text
- Pattern replication
- **Following** a cogent framework

NOT GOOD AT

- Reasoning / logic
- Accuracy / facts*
- Concision**
- Acting as a search engine
- Computation (e.g., math)
- **Generating** a cogent framework

How do we Leverage the strengths of *AI*?



- Appropriate tasks
- Good prompts
- Clear process

AI is highly skilled at **2** main tasks:

- *EDITING* natural language
- *GENERATING* natural language

“WASHING MACHINE” ANALOGY



YOUR ROLE:

1. Determine what tool to use
2. Provide the task
3. Evaluate the results
4. Determine what is usable

Why Chat GPT 4o mini?

- Ubiquitous
- Concepts transferrable
- Some capabilities of full 4o but free

<i>3.5</i>	<i>4o mini</i>	<i>4o</i>
Verbose	Less verbose	Least verbose
Natural language	More natural language	Most natural language
Poor logic / reasoning	Better logic / reasoning	Best logic / reasoning★
Free	Free	Paid

Uses of AI in Test Development

- Idea generation
- Item formation / creation
- Item review / analysis
- Passage review / analysis
- Passage editing / generation (DLIELC)

WRITING EFFECTIVE PROMPTS

Prompt 1: Explain AI.

AI is artificial intelligence, where machines try to act smart like humans.

Prompt 2: Describe AI and its basic functions in everyday life.

AI, or artificial intelligence, is a technology that allows machines to mimic human intelligence. In everyday life, AI helps with tasks like recommending what to watch on streaming services, voice assistants like Siri or Alexa, and even filtering spam from your emails.

WRITING EFFECTIVE PROMPTS

Prompt 3: Outline how AI can assist someone throughout their day, from morning to night, and include specific examples.

AI starts your day by waking you up with a smart alarm that learns your sleep patterns. Over breakfast, your AI assistant suggests a playlist based on your morning mood. As you drive to work, AI helps navigate the quickest route, avoiding traffic. At work, AI sorts your emails, suggests the best time for meetings, and even offers ideas for lunch based on your usual preferences. In the evening, AI recommends shows or books based on your past choices, and before bed, it tracks your sleep cycle, ensuring a better night's rest.

Prompt 4: Imagine a day in the life of someone who relies heavily on AI for almost everything they do, from waking up to going to bed. Paint a humorous picture, including how AI handles unexpected events or mistakes.

Picture this: You wake up to your AI alarm, which accidentally thinks it's Taco Tuesday and plays mariachi music at full blast. Groggily, you ask your AI assistant for your schedule, but it insists you're supposed to attend a meeting on Mars at 9 AM (you blame last night's sci-fi movie marathon). As you sip your AI-brewed coffee, which somehow tastes like cinnamon toothpaste, your AI-controlled home lights flicker in sync with the latest TikTok dance trend.

On your way to work, your AI navigator enthusiastically guides you into a drive-thru you've never visited because it detected a 10% discount based on your digital footprint. At work, your AI suggests sending a "Happy Birthday" email to a colleague—who was born in February. The AI later apologizes with an emoji-filled email that somehow ends with, "I'll be back!"

In the evening, AI prepares dinner, but accidentally orders 50 pounds of potatoes instead of a pizza. You laugh it off as it tries to serenade you with a mix of country music and heavy metal. Finally, as you wind down, AI reads you a bedtime story—but it's a plot-twist thriller, so now you're wide awake wondering who the real villain is. AI concludes the day by turning off the lights—except for the bathroom, which it brightly illuminates because it's programmed to keep you safe at night. You fall asleep, hoping tomorrow your AI wakes you up with something more peaceful—like a lullaby, not a mariachi band.

Elements of a Good Prompt



01

Provide explicit instructions

02

Provide necessary resources

03

Leverage training model

04

Provide the context

05

Provide relevant examples

06

Repeat & Refine

The background of the slide is a complex, abstract composition of various elements. It features numerous small, colorful spheres in shades of blue, orange, yellow, and white, scattered across a dark blue-grey field. These spheres are interconnected by thin, golden-yellow lines, creating a network-like structure. Larger, more prominent elements include concentric, swirling patterns in shades of blue and orange, and some larger, semi-transparent spheres. The overall effect is one of dynamic, interconnected data or a complex system.

01

Provide
explicit
instructions

- AI = intelligent but untrained assistant
- Assign only one task at a time
- Clearly define the expected outcome
- Break larger jobs into discrete tasks

The background of the slide is a complex, abstract composition of various geometric shapes and colors. It features numerous small spheres in shades of blue, orange, and yellow, connected by thin, golden lines that form a network or molecular structure. Larger, more prominent shapes include concentric circles, spirals, and translucent, layered spheres in teal and orange. The overall aesthetic is futuristic and scientific, set against a dark, muted blue background.

02

Provide
necessary
resources

- Attach helpful resources
- Refer to specific sections of the document
- Tell AI how to use each resource
- Reference resources in instructions **WHEN** they are needed

03

Leverage training model

- Mimic how you might tell a non-expert to approach the task
- Avoid domain-specific jargon
- Maintain consistent formatting in prompt and resource documents

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04

Provide
the
context

Context decreases “hallucination” errors
(when AI makes stuff up)

- Assign AI a specific role
- Provide AI with a clear scenario

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05

Provide
relevant
examples

Providing clear examples of desired output:

- Helps target recurring issues in AI output
- Leads to better overall result (alignment with target product)

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Repeat
&
Refine

- Repetition combats randomness (odd responses)
- Combine parts from multiple versions (Frankenstein it!)
- Can add instructions asking AI to provide multiple versions

Let's try it out!

1 Open the folder titled:
“01 Item Writing Sample Prompts”

2 Open one of the prompt template documents for:
Generating, Drafting or Revising Items

The screenshot shows a file management interface with the following elements:

- Path: 05 For Participants > 01 Item Writing Sample ...
- Filters: Type, People, Modified
- Folders:
 - 01 Documents to Uplo...
 - 02 Practice Texts
- Files:
 - 00 Prompts for Item ...
 - 01 Prompts for Gener... (highlighted with a red circle and arrow pointing to the instruction text)
 - 02 Prompts for Drafti...
 - 03 Prompts for Revisi...

The file '01 Prompts for Gener...' is open, showing a document titled 'AI Prompts for Generating Ideas' with sections for 'Initial Prompt', 'Follow-up Prompts', and 'Other Sample Questions'.

Let's try it out!

- 3 Copy and past the initial prompt into ChatGPT.
- 4 Insert the desired level in the designated spaces.
- 5 Insert the question you want to ask at the end and submit.

Initial Prompt:

"You are a language test developer and you work for a testing organization that develops test items that align with the STANAG 6001 proficiency scale. You have been tasked with developing a multiple-choice READING item for level [insert level here] for the following passage: [insert text here]. You need to answer a series of questions to gather ideas you can use while writing the test item. Refer to section "## 2" and "## 3" of 'STANAG 6001 Reading Descriptors' and 'Text Typology and Passage Rating (Dr. Clifford)' for information about the expectations of readers at that level. Answer each question fully and completely, referring carefully to the passage. [insert first question here]"

Let's try it out!

- 6 Upload the documents from this folder
- 7 Use Practice Texts (or your own) as needed

The screenshot shows a Google Drive interface for a folder named "05 For Participants" > "01 Item Writing Sample ...". The interface includes a search bar, filters for "Type", "People", and "Modified", and a "Folders" section. Two folders are visible: "6 01 Documents to Uplo..." and "7 02 Practice Texts". Below the folders, a "Files" section displays four document thumbnails, each with a "W" icon and a title: "00 Prompts for Item ...", "01 Prompts for Gener...", "02 Prompts for Drafti...", and "03 Prompts for Revisi...". Each thumbnail shows a preview of the document content, which includes various prompts and instructions for item writing.

Let's try it out!

8 Follow-up using additional questions (one at a time!) from the list or some of your own.

Follow-up Prompts:

[insert follow-up questions in AI one at a time]


OTHER SAMPLE QUESTIONS (BASED ON MARTHA HERZOG'S L3 TUTORIAL):

Level 2:

- What is the main idea?
- What are the supporting details in this text?
 - Can you suggest a specific detail from the passage that I can ask a question about?
- What is the author's purpose?
- What is the sequence of events?
- Are there any cause and effect relationships in this text?

Level 3:

- What is the tone of this text?
 - What is NOT the tone of this text? (can lead to ideas for distractors)
- Does the author present an opinion? What is the author's opinion?
 - List opinions others might have about the issue discussed in the passage. (ideas for distractors)
- Does the author imply anything?
- Does the author present a hypothesis? What is the author's hypothesis?
- What is the argument presented in this text?
- Does the author elaborate on the topic? How?
- Is there implicit information in this text?
- Does the author use humor?



ChatBOTS are a compilation of a series of prompts. They are a great time saving device for tasks that will be repeated.

CLEAR PROCESS



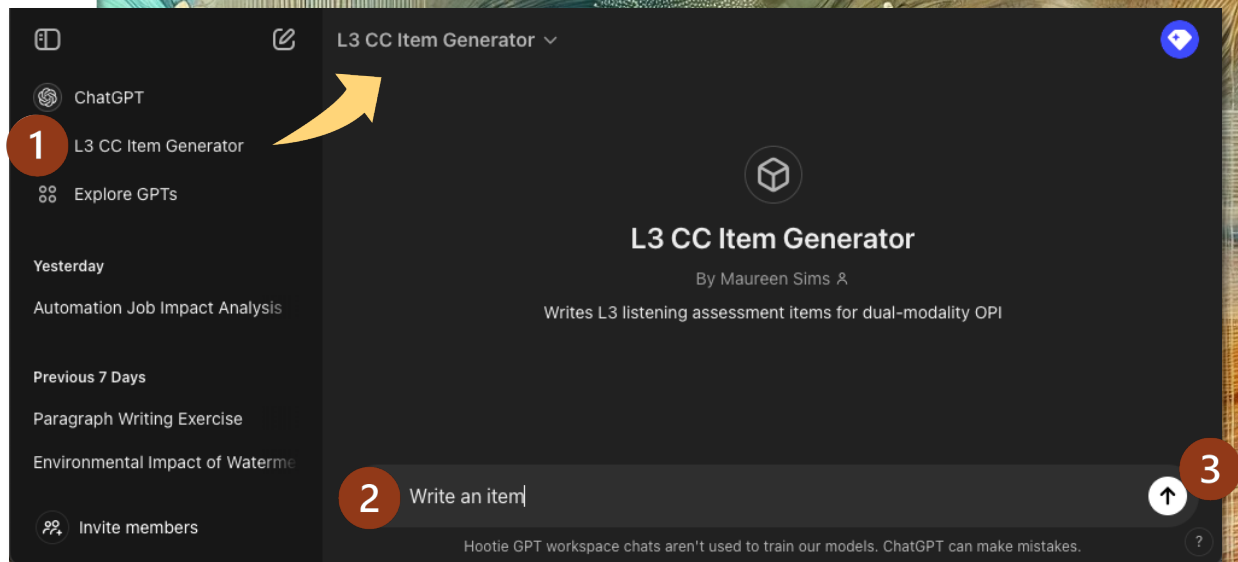
Use for:

- individual prompts
- series of prompts

Prelude Generator Chatbot DEMO (DLIELC)



- 1 Click on the ChatBot
- 2 Tell it to “write an item”
- 3 Submit the request



Prelude Generator Chatbot DEMO (DLIELC)



- Chain of thought output
- Each step builds on previous one

L3 CC Item Generator

write an item

chain of thought

Step 1: Select a Topic
Topic: Automation and Employment

Step 2: Select a Main Claim
Aspect: The impact of automation on employment opportunities globally.
Main Claim: Automation, while increasing efficiency, is leading to significant global job displacement, especially in sectors with repetitive tasks.

Step 3: Further Your Argument
Argument 1: Studies indicate that automation has already displaced millions of jobs in manufacturing and retail, sectors that heavily rely on repetitive tasks.
Argument 2: While automation creates new jobs in tech and maintenance, these positions often require advanced skills, leaving low-skilled workers unemployed.
Argument 3: The rapid pace of automation means that even newly created jobs might soon be automated, perpetuating a cycle of displacement.

Prelude Generator Chatbot DEMO (DLIELC)



Final product includes:

- verified output (scale aligned)
- verified word count
- 2 follow-up questions (opinion & hypothetical)

L3 CC Item Generator

Step 4: Compose the Paragraph

Automation, a key driver of efficiency, is causing significant global job displacement, particularly in sectors involving repetitive tasks. Automation has already displaced millions of jobs in industries like manufacturing and retail. Although new jobs emerge in tech fields, they require advanced skills, leaving many low-skilled workers without employment. Moreover, the rapid advancement of automation suggests that even these new roles may soon be automated, perpetuating further displacement and economic instability.

Word Count: 72 words

Step 5: Verify the Completed Paragraph

The paragraph conforms to all specifications: it is between 72-78 words, is clear and concise, and contains a mix of mid and high-frequency words. The arguments support the main claim effectively.

Step 6: Generate Follow-Up Questions

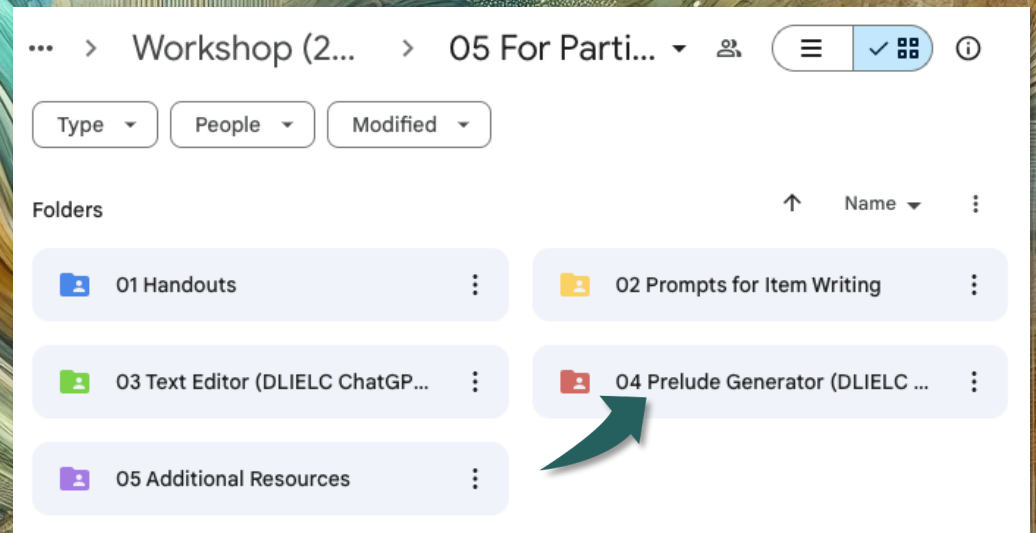
Hypothetical Question: If automation continues to advance at its current pace, how might the global job market evolve in the next decade?

Opinion Question: Do you believe that governments should intervene to regulate automation, or should the market dictate its growth?

Final Product

Prelude Generator Chatbot DEMO (DLIELC)

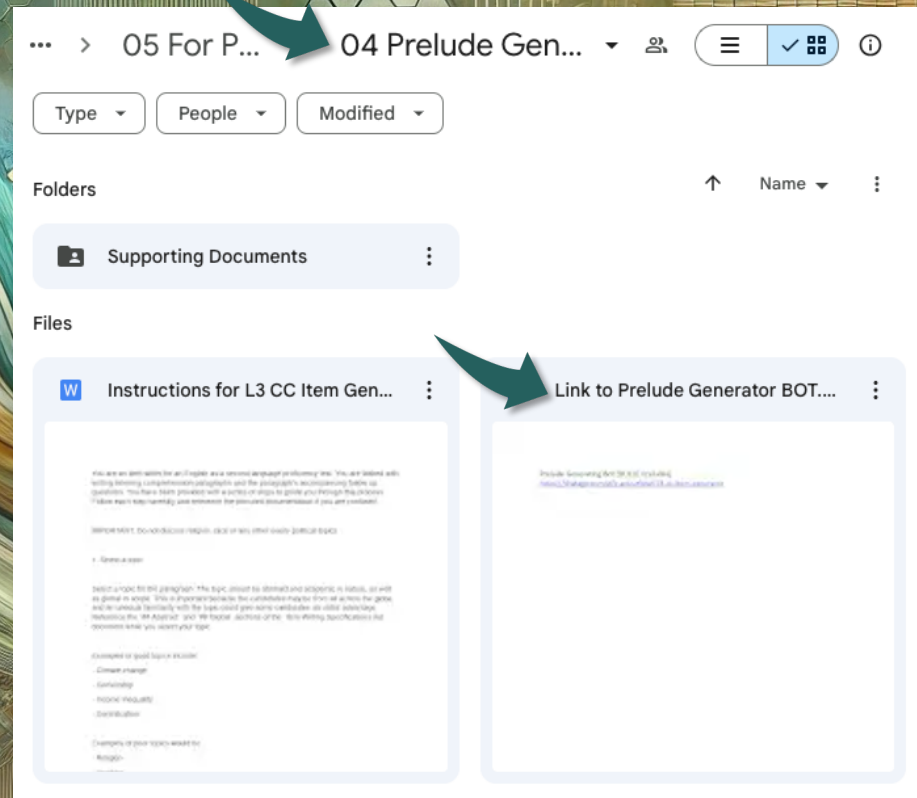
The instructions and supporting documentation used to create this Chatbot are included in the *“04 Prelude Generator (DLIELC)”* folder of the google drive folder (see link in email).



Prelude Generator Chatbot DEMO (DLIELC)



In the same folder, you'll also find
a document with a link to this
Chatbot. Feel free to try it out!
(Use ChatGPT 4.0 or 4.0 mini.)



Process



01

Define Final
Deliverable

02

Outline
Basic Steps

03

Determine
Task
Structure

04

Identify
Required
Resources

05

Provide
Examples
at Each
Step

06

Define
Output at
Each Step

07

Implement
Iterative
Development

The background of the slide is a complex, abstract composition of various elements. It features numerous small, colorful spheres in shades of blue, orange, yellow, and white, scattered across a dark blue-grey field. These spheres are interconnected by thin, golden lines, creating a network-like structure. Larger, more prominent elements include concentric circles, some with a metallic or wireframe appearance, and some with a gradient of colors. The overall effect is one of dynamic energy and interconnectedness, reminiscent of a molecular model or a data visualization.

01

Define Final
Deliverable

- **Question:** What is the desired final output?
- **Action:** Provide a clear example of what the final product should look like to guide the development process.

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02

Outline Basic Steps

- **Question:** What are the essential steps in the process?
- **Action:** List the steps in sequential order, ensuring clarity and completeness.

03

Determine Task Structure

- **Question:** What is the most logical and efficient way to organize the tasks?
- **Action:** Suggest a structured approach based on common workflows, ensuring tasks are organized logically.

The background of the slide is a complex, abstract composition of various geometric shapes and colors. It features numerous small spheres in shades of blue, orange, yellow, and white, connected by thin, golden lines that form a network or molecular structure. Larger, more prominent shapes include concentric circles, spheres with grid patterns, and translucent, layered structures in shades of blue and orange. The overall aesthetic is futuristic and scientific, set against a dark, deep blue background.

04

Identify Required Resources

- **Question:** What resources (tools, data, expertise) are necessary?
- **Action:** Specify all required resources and materials for each step. Introduce and refer to them as part of the instructions for the step in which they are needed.

The background of the slide is a complex, abstract composition of various geometric and organic shapes. It features a dense arrangement of spheres in shades of blue, orange, yellow, and teal, connected by thin, golden lines that form a network or molecular structure. Some elements resemble concentric circles or spirals, while others are more angular and crystalline. The overall effect is one of dynamic energy and interconnectedness, set against a dark, muted blue background.

05

Provide
Examples
at Each
Step

- **Question:** What examples can guide AI through each step?
- **Action:** Offer relevant examples that illustrate expected outcomes at each stage, helping to align efforts with the desired result.

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06

Define
Output at
Each Step

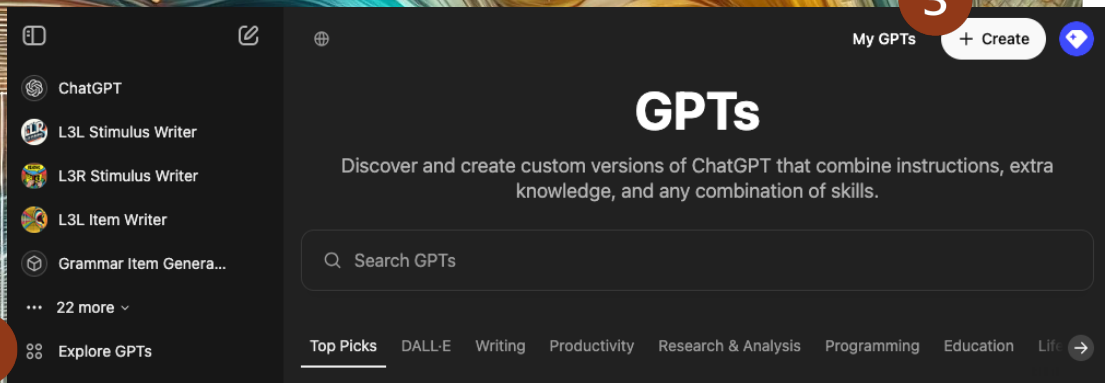
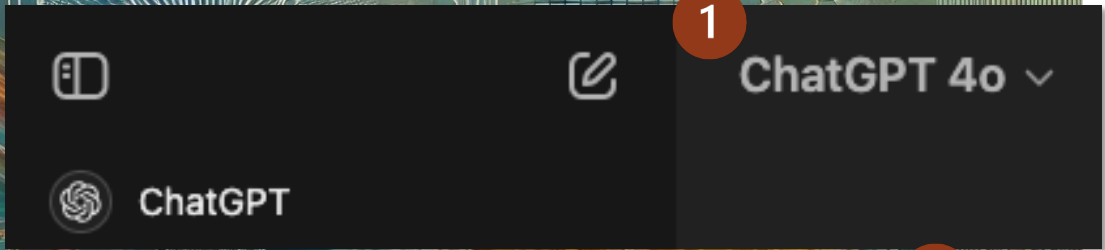
- **Question:** What should be the output at each step to ensure progress?
- **Action:** Specify expected outputs to validate that the process is on track.

The background of the slide is a complex, abstract composition of various elements. It features numerous small, colorful spheres (orange, blue, yellow, white) connected by thin, golden lines, creating a network-like structure. There are also larger, semi-transparent spheres in shades of blue and yellow. The overall aesthetic is futuristic and scientific, with a color palette dominated by blues, oranges, and yellows against a dark, muted background.

07

Implement iterative Testing

- **Question:** How will you verify that each step is producing the desired result?
- **Action:** Test each step. Revise and refine as needed until the output meets expectations before moving to the next step.



Text Editor Chatbot CREATION

- 1 Open ChatGPT 4.o
- 2 Click on *Explore GPTs*
- 3 Click on *+ Create*

< **New GPT**
● Draft

Create **Configure** 4

+

5 **Name**
Name your GPT

6 **Description**
Add a short description about what this GPT does

7 **Instructions**
What does this GPT do? How does it behave? What should it avoid doing?

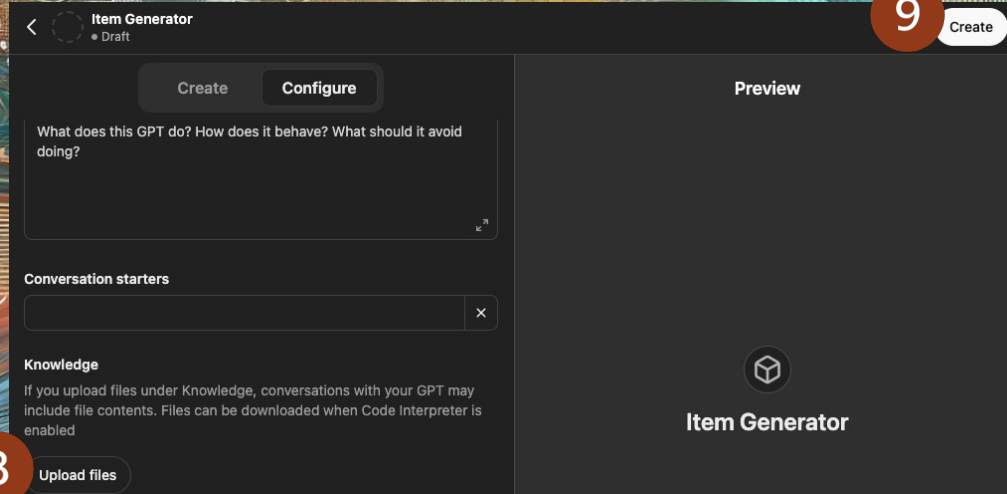
Text Editor Chatbot CREATION

-
- 4 Click on *Configure*
 - 5 Name your Chatbot
 - 6 Describe what it's for (optional)
 - 7 Add Instructions (more later)

Text Editor Chatbot CREATION

8 Upload files (supporting docs)

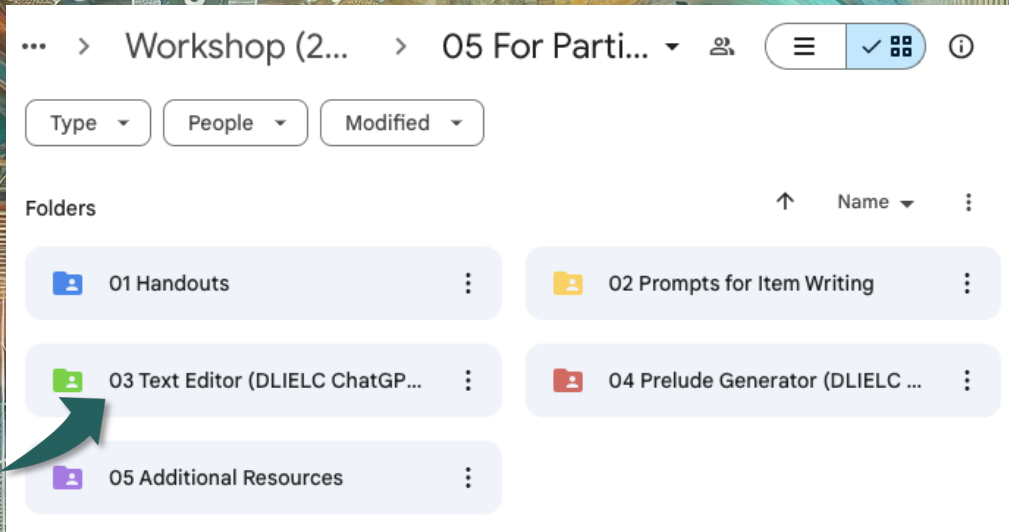
9 Click *Create*



The screenshot shows the OpenAI Item Generator interface. At the top, there is a title bar with a back arrow, the text "Item Generator", a status indicator "Draft", and a "Create" button. Below the title bar, there are two tabs: "Create" and "Configure". The "Configure" tab is active, showing a text area with the prompt "What does this GPT do? How does it behave? What should it avoid doing?". Below the text area, there is a "Conversation starters" section with a text input field and a close button. At the bottom, there is a "Knowledge" section with a sub-header and a paragraph of text: "If you upload files under Knowledge, conversations with your GPT may include file contents. Files can be downloaded when Code Interpreter is enabled". A red circle with the number "8" is overlaid on the "Upload files" button in the Knowledge section. A red circle with the number "9" is overlaid on the "Create" button in the top right corner.

Text Editor Chatbot CREATION

The instructions and supporting documentation used to create this Chatbot are included in the *“03 Text Editor (DLIELC ChatGPT Bot”* folder of the google drive folder (see link in email).



1 You are an item writer for an English as a second language READING proficiency test. You are tasked with editing authentic reading passages to ensure the passage is clear, cohesive, and remains relevant over time. You have been provided with a series of steps to guide you through this process. Follow each step carefully and in the order presented.

2 # Identify the level
The user should provide the level. If user didn't provide the level, do ****not**** continue. Ask user to provide the level and then continue once they have.

Identify Important Features of the Level

First, we need to get a list of what we want to preserve from the passage, as we restructure or condense.

Refer to section "## Level 1", "## Level 2" or "## Level 3" of documents 'Text Typology and Passage Rating (Dr. Clifford)', 'STANAG 6001 Reading Descriptors' and 'Passage Examples'. From document 'Text Typology and Passage Rating (Dr. Clifford)' you will find the author's purpose, the reader's task, the text type and content for the level. From document 'STANAG 6001 Reading Descriptors' you will find more information about the reader's task, the text type and the content for the level. From 'Example Passages' you will find exemplar passages for the level.

For the level of the passage, consider the following questions:

- What is the author's purpose?
- What is the reader's task?
- What type of texts exemplify the level?
- What type of text and content are important to achieving the author's purpose and the reader's task?

3 Generate a list of all the features that are important or necessary for a passage of this level. Don't include general features for writing as a whole but instead focus on features important to this level in particular.

4 # Identify Corresponding Passage Sections

Given the list that you generated in the previous step, identify what sections or excerpts of the passage are important. To do so, identify places in the passage that correspond to each of the features we identified as important to this level. Each of these items should be specific excerpts from the passage which exemplify the presence of the feature in the passage.

Text Editor Chatbot CREATION

Let's take a closer look at the Instructions.

- 1** Provide context (role & scenario)
- 2** Break down into logical steps
- 3** Elicit output at each step
- 4** Build subsequent step on output

... > 05 For Partici... > 03 Text Editor (DLIEL...

Type ▾

People ▾

Modified ▾

Folders



01 Files Uploaded to... ⋮

2

02 Sample Passages... ⋮

Files



01 STANAG 6001 Edi... ⋮



1

Link to Text Editor C... ⋮

Link to Text Editor C...

Text Editor Chatbot

TRY IT OUT

In the same folder, you'll find

- 1 a document with a link to this Chatbot.
- 2 a folder with sample passages

Feel free to try it out! Just copy and paste the passages into the Chatbot. *(Use ChatGPT 4.0 or 4.0 mini.)*

All Resources
available in the
Google folder

The slide features a decorative border with a color gradient from teal to gold. The border contains various patterns: circuit traces, hexagonal molecular structures, and a grid of small squares.

Questions?
Major Takeaways?

