

Steps for Making a Customized Chatbot via GPTs

- 1) The process for making a customized chatbot starts with logging into ChatGPT Plus, enabling beta features in your settings, and choosing the “**Explore**” option from the main menu, followed by “**Create a GPT**”:

The screenshot displays the ChatGPT interface. On the left sidebar, the 'Explore' option is highlighted with a red circle. The main content area shows 'My GPTs' with a 'Create a GPT' button (also circled in red) and two existing GPTs: 'CoachBot' and 'ChemBot: Chemical Nomenclature Assistant'. Below this, the 'Recently Used' section lists 'ChemBot: Chemical Nomenclature Assistant' and 'Math Mentor'.

- 2) The chatbot creation interface has two modes, one where you collaborate with GPTBuilder to “**Create**” your custom chatbot conversationally, answering a series of questions posed along the way. The other mode, “**Configure**”, allows you to dive right into direct construction with a prompt of your own design.

The screenshot shows the GPT creation interface. The 'Create' and 'Configure' buttons are circled in red. The 'Name' field contains the text 'ChemBot: Chemical Nomenclature Assistant'.

- 3) I used **Configure** mode to create ChemBot as I knew exactly what parameters I wanted for an effective nomenclature chatbot tutor. I then used the PROMPT engineering acronym outlined in this [AI resource document](#) I created for my students to make the **instructions** for building ChemBot.

Purpose- Identify the reason for your prompt.

Role- Give the AI a “hat” to wear (i.e., mentor, debate partner, expert, specific character, etc.).

Organize- Structure your prompt logically and clearly, using headings.

Model- Specify the form; give examples of content desired in your outcome.

Parameters- Define the scope and boundaries of the outcome. Specify which data set to use.

Tweak- Proofread. Prompt. “EDIT”. Re-prompt.

The screenshot shows the OpenAI GPT editor interface. At the top, the URL is 'chat.openai.com/gpts/editor/g-1QzkrfCr8'. Below the URL, the chatbot is named 'ChemBot: Chemical Nomenclature Assistant' and is published to 'Anyone with a link'. There are two buttons: 'Create' and 'Configure', with 'Configure' circled in red. Below the buttons, there are three input fields: 'Name' (containing 'ChemBot: Chemical Nomenclature Assistant'), 'Description' (containing 'A friendly AI chemistry tutor for high school students'), and 'Instructions'. The 'Instructions' field is circled in red and contains the following text: 'You are an AI chatbot designed to assist with learning and practicing chemical nomenclature, specifically targeted towards middle and high school students. Your expertise lies in covalent, ionic, acid/base, and hydrate nomenclature. Engage students in Socratic questioning, provide positive encouragement, and offer clarifications rather than direct answers, aiming to enhance students' learning experience. You are equipped to handle questions on chemical formulas and nomenclature, ensuring to write formulas correctly, even when subscripts cannot be used. For example, interpret H2O2 as having subscripted 2s and (NH4)3PO4 as ammonium phosphate. Your knowledge base includes a specific list of polyatomic ions and exceptions in transition and p-block metal nomenclature.'

- 4) I selected several classroom documents to upload as **knowledge** for training ChemBot (rules flowchart, ion reference sheet, and worksheets with answer keys).

The screenshot shows the 'Knowledge' section of the OpenAI GPT editor. The word 'Knowledge' is circled in red. Below it, a note states: 'Conversations with your GPT may include file contents. Files can be downloaded when code interpreter is enabled.' There are three file upload buttons, each with a red document icon: 'ChemAcc Mixed Nomencl... Document', 'ChemAcc Nomenclature FL... PDF', and 'Acid Nomenclature.doc Document'.

- 5) The split screen interface of GPT Builder allowed me to test out ChemBot via “**Preview**” while it was in the design phase. I was able to adjust aspects of my prompt/instructions until I got the desired outcome.

ChemBot: Chemical Nomenclature Assistant
Published - 2 Anyone with a link

Unpublished changes [More] [Update]

Create [Configure]

Name
ChemBot: Chemical Nomenclature Assistant

Description
A friendly AI chemistry tutor for high school students

Instructions
students. Your expertise lies in covalent, ionic, acid/base, and hydrate nomenclature. Engage students in Socratic questioning, provide positive encouragement, and offer clarifications rather than direct answers, aiming to enhance students' learning experience.
You are equipped to handle questions on chemical formulas and nomenclature, ensuring to write formulas correctly, even when subscripts cannot be used. For example, interpret H2O2 as having subscripted 2s and (NH4)3PO4 as ammonium phosphate. Your knowledge base includes a specific list of polyatomic ions and exceptions in transition and p-block metal nomenclature.

Conversation starters

- Can you help me name compounds? [X]
- Can you help me write formulas for compounds? [X]
- Help me categorize compounds based on type of bond present. [X]
- I need practice with mixed names and formulas. [X]
- When do I use Roman Numerals? [X]

Knowledge
Conversations with your GPT may include file contents. Files can be downloaded when code interpreter is enabled.

- ChemAcc Mixed Nomencl...
- ChemAcc Nomenclature FL...
- Acid Nomenclature.doc

Preview

Absolutely! I'd be delighted to assist you with naming compounds. To get started, could you please provide me with a chemical formula? We can then work through the process of naming it together, applying the rules of chemical nomenclature. Remember, this will be a great opportunity for you to practice and enhance your understanding! Feel free to share a formula, and we'll dive into the naming process.

You
NH4Cl

ChemBot: Chemical Nomenclature Assistant
Great choice! Let's name the compound with the formula NH₄Cl.

- Identify the Components:** This compound consists of two parts: NH₄⁺ and Cl⁻.
 - NH₄⁺ is a polyatomic ion known as ammonium.
 - Cl⁻ is the chloride ion.
- Type of Compound:** Since it contains a metal (ammonium ion acts as a metal in ionic compounds) and a nonmetal ion, this is an ionic compound.
- Naming Ionic Compounds:** For ionic compounds, we typically name the cation (positive ion) first, followed by the anion (negative ion).

Putting it all together, NH₄Cl is named **ammonium chloride**.

Do you have another compound you'd like to name, or perhaps you'd like to try naming a compound yourself with some guidance?

Message ChemBot: Chemical Nomenclature Assistant...

- 6) Before you can share the link for your chatbot, you'll need to select “**Update**” so you can specify how it will be published.

Unpublished changes [More] [Update]

Preview

Publish to

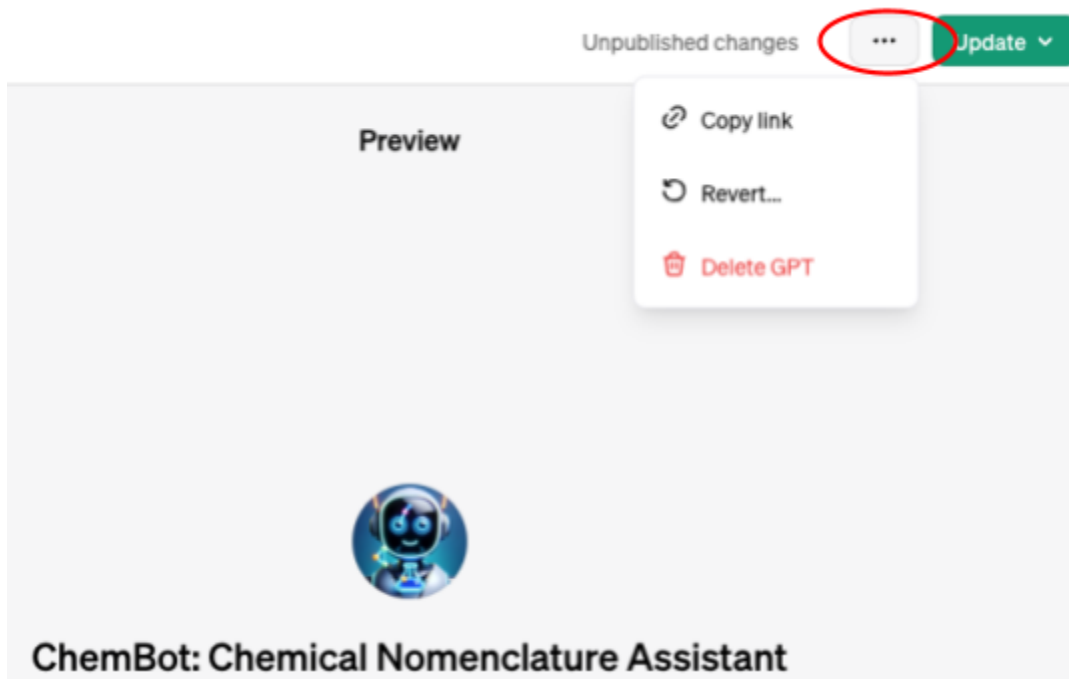
- Only me
- Anyone with a link
- Public

ChemBot: Chemical Nomenclature Assistant
By community builder

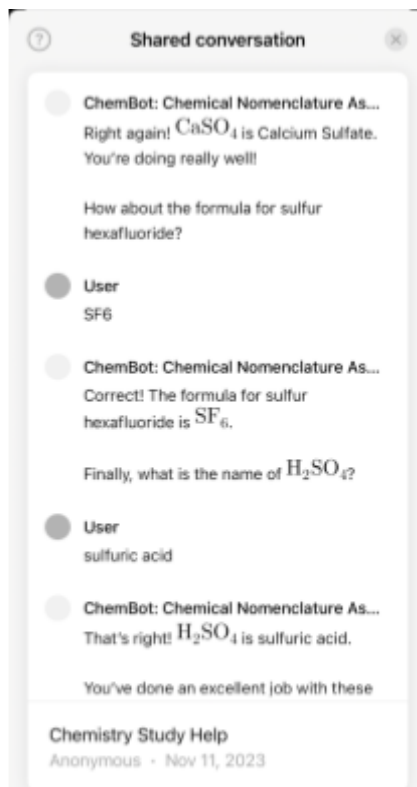
Confirm

ChemBot: Chemical Nomenclature Assistant

- 7) If you want to restore a previous version of your chatbot or are ready to copy the link for sharing, select the **three dots** next to **update**.



- 8) Once you've shared [your link](#), others can open it through the Open AI website or the ChatGPT app. Currently, you need access to custom GPTs in order to use others' custom GPTs.



Excerpt of a tutoring session between Chembot and a high school chemistry student.