

我们的编程冒险：使用大语言模型为学龄前儿童个性化有形编程机器人的叙述

Martin Ruskov

Department of Languages, Literatures, Cultures and Mediations, University of Milan, Piazza Sant'Alessandro 1, 20123 Milan, Italy

Abstract

寻找在教育中平衡使用大型语言模型 (LLMs) 的方法是一个挑战，因为对这项技术的误解和受众容易受到影响。特别是对于年轻儿童来说，他们已知存在长时间面对屏幕的问题。通过和一个名为 Cubetto 的实物编程机器人合作，我们提出了一种方法，利用这种模型为学龄前儿童准备个性化的故事讲述，帮助孩子们习惯于指挥机器人的实践。我们参与行动研究，开发了一个早期版本的形式化过程，以快速原型化 Cubetto 的游戏故事。我们的方法既有可重复的结果，因为它使用开源权重模型，并且是模型不可知的，因为我们用 5 个不同的 LLMs 进行了测试。一方面记录了过程、使用的材料和提示，另一方面则记录了学习体验和成果。我们认为生成的成功达到了预期目的，可以作为教师辅助工具使用结果。在 4 种不同任务场景中对模型进行测试时，我们遇到了一致性问题和幻觉，并记录了相应的评估过程以及克服这些问题（有些成功，有些未成功）的尝试。重要的是，这个过程不会让孩子们直接接触到 LLMs。相反，技术被用于帮助教师轻松开发儿童偏好主题的个性化叙述。我们认为我们的方法适合学龄前班级，并计划在实际教育环境中进一步实验。

Keywords

实物编程, 学前教育, 大型语言模型故事讲述, 开放权重模型

1. 介绍

在教育中运用大型语言模型 (LLMs) 并不是一项简单的工作 [1]。对于已经知道长时间面对屏幕会有困难的年幼孩子来说，这尤其具有挑战性 [2]。同时，在教育初期阶段，孩子们非常不同且不太适应标准化的教学过程。他们对发展早期科学、技术、工程和数学 (STEM) 能力所需的抽象概念不熟悉。为了说明这一点，一个非同小可的问题是“为什么我要编程让机器人去某个地方，当我可以自己把它放在那里？”而且，他们也不太理解开发计算思维的必要性 [3]。

我们的贡献是在 Cubetto 这个物理编程平台的背景下：一个在轮子上行驶的机器人和一块可以插入命令块的控制板 [4]。虽然 Cubetto 附带的教学材料旨在教授如何使用它，包括为儿童设计的身体活动和创造性活动 [5]，但它们留给教师去进一步讲解那些可以让孩子们习惯机器人的广泛重复练习。我们从这样一个前提出发：让孩子们适应 Cubetto 及其控制是一项重要的先决条件。因此，我们提出了一种方法来支持幼儿园老师开发必要的教育故事讲述技巧，以吸引孩子们参与学习活动。这一方法受到了 AI Dungeon 的叙事成功的启发，这是一个互动平台，它通过与 ChatGPT 用户的交互合作创造叙述体验 [6]。使用 LLMs 进行这样不太具有挑战性的学习活动可以使人们更容易辨别出所需的教学特征。

2. 背景

计算思维被认为是 21 世纪儿童需要发展的一项关键能力，而编程技能是其基石。特别是自 20 世纪 80 年代以来，海龟编程的实践一直是最常见的入门方法之一 [7, 8]。一些平台通过引入可触摸编程工具包尝试让更年轻的观众也能接触到这些知识 [9, 10, 4]。无论是否单独教授或融合到其他科目中，教授编程技能都有助于学生培养重要的能力。在幼儿时期，教学编程的过程可以通过与讲故事活动相结合的方式得到增强，这是一种符合发展的传递方式。一项 2022 年的系统回顾确定了需要开发整合编程教学和相应教师培训课程的教育大纲 [3]。在讨论向 K-12 学生教授编程的障碍时，另一项元分析指出文本基础编程的高度抽象和复杂语法是一个问题 [11]。作者特别指出了学生对文本基础编程缺乏兴趣是主要挑战之一，并建议需要改进教学方法以激发学生的动机和兴趣 [11]。

基于块和可视化的编程工具作为一种方式出现，使编程对可能在传统文本式方法上遇到困难年轻观众更加易于接触 [12]。研究表明，使用基于块的可视化编程工具学习编程的小学生比仅使用传统的文本式编程工具学习的学生具有更好的学术成绩 [12, 13]。Cubetto 是几个遵循类似理念的玩

D-SAIL Workshop - Transformative Curriculum Design: Digitalisation, Sustainability, and AI Literacy for 21st Century Learning, July 22, 2025, Palermo, Italy

✉ martin.ruskov@unimi.it (M. Ruskov)

ORCID 0000-0001-5337-0636 (M. Ruskov)



© 2025 Copyright for this paper by its authors. Use permitted under Creative Commons License Attribution 4.0 International (CC BY 4.0).

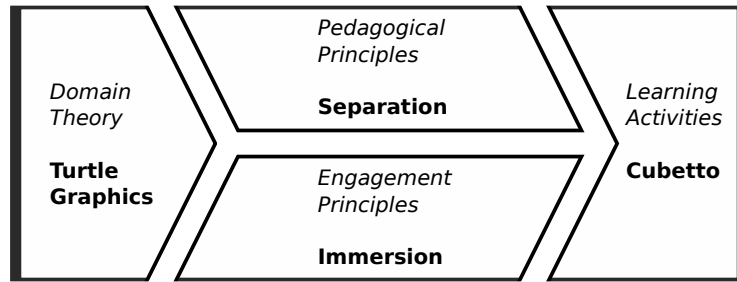


Figure 1: 将教育元素和游戏化元素结合在一起的教学过程。

具之一，它被开发出来进一步推广这一方法 [4]，使基于块的编程也对容易过度接触屏幕时间的更年轻的孩子以及周围越来越不愿意让小孩接触数字屏幕的大人更加易于接受 [2] 和 [14]。特别是关于 Cubetto 的文档和学习材料 [4, 5]，都充满了各种与机器人互动的例子，当涉及到向小孩子教授编程技能时。这包括为儿童设计的不同身体活动，例如模仿和同情机器人、共同创作故事的活动以及创造性的活动——使用绘画、角色扮演等。

关于玩游戏的动机研究 [15] 表明存在三个更广泛的动机类别：成就、沉浸和社会动机。这三类及其十个组成部分为游戏化任务提供了更广泛的指示。当然，挑战和成就是其中的一部分，在我们的特定情况下，这些通过导航机器人的性质得到了解决。但是，沉浸部分强烈地涉及讲故事，包括发现、角色扮演、定制和逃避等主题，这些可以通过叙事找到形式。孩子们之间的共享故事讲述也可以增强第三个类别，即社会动机的组成部分，包括社交化、关系和团队合作。寻找方法来包含任何这些动机因素加强了吸引儿童的机会。我们的方法受到 AI 地牢（一个使用 ChatGPT 与用户互动以协作创建叙述体验的交互平台）叙事成功的影响 [6]。

3. 方法

这里我们旨在开发一种使用快速原型设计的正式方法的早期版本。为此，我们进行了行动研究，探讨如何促使大型语言模型（LLM），类似于之前关于文本到图像转换器能力 [16] 的做法。这种做法使我们能够同时研究当前 LLM 在学前教育中实现人机协作的可能性以及实现这一协作的过程。通过并行展示五种不同模型的使用情况，我们证明了该过程可能独立于所选特定的大型语言模型。

为了指导预期形式化方法的发展，我们转向了之前开发的严肃游戏设计的方法论框架。我们构建了一个由 Davies 和 Mangan 提出的流程，该流程从理论出发，通过教学原则最终到达学习活动的设计 [17]，我们在其中加入了平行的教学和参与原则来扩展这一过程以发展教育游戏 [18]。特别地，作为教学原则，我们之前提出了现象图谱学或变式理论，该理论认为为了有效地理解一个现象，学习者需要体验围绕它的变化。这种变化包括三个基本步骤：(i) 对比其中一个维度的现象被玩转，而其他维度保持固定；(ii) 分离其中相反地一个维度被保持固定；和 (iii) 融合其中在各个维度之间的自由互动被体验 [19]。另一方面，我们还提出了参与原则，基于 Yee 的成就、沉浸和社会动机维度 [15]。在此框架内，我们旨在通过分离和沉浸的方式使用 Cubetto 教授基本的海龟编程，如图 1 所示。

3.1. 材料

我们提出了一种与 Cubetto 相结合的学习体验，Cubetto 是一个旅行箱形状的木制机器人。它遵循通过在控制板上放置物理指令块所提供的指令。标准的 Cubetto 套装包含四个命令，但对于学龄前儿童，我们只使用其中三个关于移动的命令 (move forward- 绿色, rotate left- 黄色和 rotate right- 红色)。我们还使用了如图 2 所示的 Cubetto 的一个稍微增强版本。特别是，为了帮助孩子们熟悉这些命令，我们在机器人顶部使用颜色标记。这些标记有助于将命令与相应的行为关联起来。

作为一种解决持续使用和可重复性问题的方法 [20]，我们的研究专门涉及开放权重模型。特别是，我们考虑了 Google 的 Gemma、Meta 的 Llama、Mistral、AllenAI 的 oLMo 以及阿里巴巴的 Qwen。我们通过 llama.cpp 平台 ¹ 和 GGUF 模型格式访问这些模型。为了确保可访问性和数据隐私，我们将

¹<https://llama-cpp-python.readthedocs.io>

Table 1
故事的示例组成部分，作为参数提供给提示，以向儿童提出主题、对象和任务。

#	叙述世界	主题	任务
1	knights and princesses	Barbie dolls	enact a pursuit
2	pirates	Lego figures	find a treasure
3	superheroes	Hot Wheels cars	enact a struggle
4	Wild West	Brio trains	rescue someone

重点放在可以在当代笔记本电脑上本地运行而无需使用 GPU 功能的模型上。这些要求将我们的研究导向了参数在 70 亿到 90 亿范围内的模型及其从 HuggingFace 获取的最大可用 3 位量化版本²。

我们的实验将 Cubetto 与流行的常见玩具结合在一起。一方面，这些额外的游戏主题被作为灵感和参与的载体；另一方面，则是作为一种方式让儿童克服编程过于抽象这一挑战，特别是对于本研究感兴趣的年龄段 [9, 10]。此外，这给了我们一个机会来捕捉 LLMs 应对实际约束的能力有多强。为了说明这种方法，我们选择了四种玩具，这些玩具在学龄前儿童中很受欢迎：芭比娃娃、乐高玩偶、Hot Wheels 汽车和 Brio 火车。这些中的每一个都成为我们在提示中参数的可能值，如下一小节所示。特别是 Brio trains 主题提出了一个挑战。这些木质火车因为两个原因很难适应：(i) Cubetto 既不能沿着也不能穿过笨重的木质轨道行驶，以及 (二) 火车跟随轨道行进，因此没有代表 rotate left 和 rotate right 指令块的方向移动功能。虽然这一点对于人类来说是直观的，但对于 LLM 可能不是如此。

3.2. 提示模板和参数

对于提示的构成，我们借鉴了叙事结构主义传统的灵感，特别是弗拉基米尔·普罗普关于民俗形态学的作品 [21]。我们设计了一个提示模板来让模型生成想法。具体来说，我们采用了三个个性化参数：narrative world、subjects 和 task。前两个用于分别设定背景和主角，以便它们可能与儿童当前的偏好、愿望以及可用的玩具相匹配。第三个参数，任务，用于设定目标，并且其可能的建议是从普罗普的函数中得出的。我们选择了我们认为与主角相关的那些，如表 1 所示。

在我们的实验中，我们使用表 1 中的行所提供的组合，但这种方法允许以任何排列方式重新组合它们或引入更多变体。我们将这些参数通过以下提示提供给大语言模型：

²<http://hf.co/bartowski/gemma-2-9b-it-GGUF>
<http://hf.co/bartowski/Meta-Llama-3.1-8B-Instruct-GGUF>
<http://hf.co/bartowski/Mistral-7B-Instruct-v0.3-GGUF>
<http://hf.co/bartowski/OLMo-2-1124-7B-Instruct-GGUF>
<http://hf.co/bartowski/Qwen2.5-7B-Instruct-GGUF>



Figure 2: 增强的 Cubetto 配有颜色标记，旨在帮助儿童将命令积木与动作匹配。

“建议教师使用 *Cubetto* 实物编程玩具为学龄前儿童设计一个游戏。该游戏应围绕{叙事世界}展开，涉及{主题}，孩子们应该使用 *Cubetto* 来{完成任务}。仅限使用三种 *Cubetto* 指令块：前进、左转和右转。描述应大约半页长。”

此过程的确切可重用代码以及 LLMs 提出的生成场景概述可在附录中找到。这，以及提示和相应生成的完整存档均可在在线项目仓库³中获得。

4. 结果

我们的实验包括七个轮次的生成以优化最终结果。此计数仅包含端到端生成，其中提示与表 1 中的所有 4 组参数相结合。

一般来说，所有测试过的大型语言模型都能很好地完成这项任务，并提供可操作的指示。然而，由于下面列出的问题，这些不应被视为已经校对并可以直接使用的指南，而应视为激发教育者创造力的提示。

无需提示，所有模型都力求生成结构化、自包含且详细的活动描述。这些是格式化的文档，长度约为一页。生成的文件结构并不一致，即使是同一 LLM 的迭代中也是如此。然而，典型的特色部分包括场景主题、目标、所需材料、预备设置、指令或游戏玩法、声称的学习成果以及所提议活动的变化。

虽然这种提出的解决方案通常是有用的，但它导致了一个技术问题——生成的响应比大型语言模型可用的响应令牌缓冲区更大，因此被裁剪。有利的一面是，这种情况通常发生在建议的任务已经足够清晰，即使缺少结尾部分，教师也能解读的时候。我们试图通过在提示中添加请求来解决过长响应的问题，要求回答不超过半页，或者设置字符限制。*Gemma*、*Llama* 和 *oLMo* 似乎始终忽略这部分指令，仍然生成超过缓冲区限制的响应。*Mistral* 和 *Qwen* 则调整了它们的响应，提供更短的建议并解决了这个问题。

不一致和幻觉普遍存在，但通过教师指导可以轻松克服。在一个常见的不一致示例中，大语言模型声称提供所需材料的列表，但这通常是不完整的，有时会提到立方托套装的一些必要部分，但不是全部（例如，交换地块和板，尽管一个不能没有另一个运行）。典型的幻觉是提出使用不存在的立方托命令块。我们通过添加明确允许的命令块列表来解决这一问题，详见第 3.1 节。这似乎运作良好，并消除了与命令相关的幻觉。然而，鉴于响应长度是一个问题，大语言模型始终重复命令限制要求——我们认为这对最终任务并无益处。

任务 1（执行追捕）和任务 3（执行斗争）可能会带来挑战，因为它们可能涉及两个主动的主体，而模型通常提出仅涉及一个 *Cubetto* 机器人的解决方案。所有模型，但 *Qwen* 将任务 1 转化为救援行动，即目标不移动。同样地，对于任务 3，只有 *Mistral* 和 *Qwen* 没有明确地将任务转换为救援行动。回到使用多少机器人的问题上，唯一建议使用超过一台的是 *oLMo* 的任务 2（寻找宝藏）和 *Qwen* 的任务 3（执行斗争）。这些提议涉及将儿童分成小组，每组一个机器人，即使这些小组之间没有互动。因此，所提出的活动很容易适应只用一个机器人。更广泛地说，除了 *oLMo* 以外的所有模型都提出了将儿童分成团队的建议。这在参与的儿童人数以及这个数字是否足以合理地进行分队方面作出了未经证实且不必要的假设。当谈到第四项任务的具体挑战时，*Brio* 火车轨道被提议为“使用 *Cubetto* 引导火车通过 *Brio* 轨道”，这似乎难以实施。其他建议可能会导致将 *Brio* 轨道用作连续障碍物形成峡谷的想法，这可以被视为一个非常有创意的解决方案。其他的大语言模型（LLMs）似乎能够足够抽象地回应而不强调这一特定挑战，并提供诸如“导航通过 *Brio* 轨道”（*Llama*）、“使用 *Brio* 火车轨道创建蜿蜒的小路”（*Mistral*）这样的短语。

5. 讨论与结论

我们的方法在本地安装小型模型，并且我们共享了所有必要的材料以实现该方法的复现和采用。然而，如果这一过程超出了教师的技术能力，那么通过使用相同或类似的提示在线访问现成的模型则是一个完全可行的替代方案。这种方法不会披露任何个人信息，因此不应有任何隐私问题。但是，后续的研究阶段需要与更广泛的儿童群体以及独立于流程开发者的幼儿园老师进行互动。这将提供有关该方法在实际应用中的有用性以及作为直接目标受众的教师和作为间接目标受众的儿童对该方法的看法的证据。然而，介绍这种方法的方式需要结合 *Cubetto* 的更广泛学习环境，包括对机器人 [4, 5] 的其他入门活动。

我们坚持认为强调这一点很重要，到目前为止，还没有任何理由或正当理由支持直接将大语言模型生成的内容暴露给儿童。相反，正如我们在这里提出的那样，这项技术可以用来帮助工作繁重

³<https://github.com/mapto/our-coding-adventure>

的教师整理一些相对琐碎的故事内容，这些内容是教师们认为在学习过程中需要整合的有用元素。因此，我们的目标是双重的：一方面支持教师的创造力，另一方面不要要求他们参与超出基本合理互动范围的活动。

在过程中，我们遇到了 LLMs 由于担心暴力或歧视而拒绝回应任务的情况。这些情况很少，并通过提示的轻微变化得以解决。然而，基于前面提到的不直接将儿童暴露于 LLM 输出的观点，我们认为以审查回复来保护儿童的前提在我们的教育环境中是错误的。是否内容适宜不应由模型或其作者决定，同时沉默对话也不是解决历史争议的有效方式。至少在我们考虑的情境中，我们认为应该由教师主导此类决策。这与之前的研究报告一致，即教师需要更多地参与 LLM 的教育应用 [1]。

虽然这是一个引人关注的话题，但由于本研究采用的方法，我们的结果不能用作 LLMs 系统比较的手段。然而，人们不禁注意到不同模型表现出一致的不同行为。作为同一下一个标记生成任务的不同解决方案，这些差异随着确切的架构和确切的训练语料及训练程序而出现。尽管关于最优架构的研究仍在进行中，但研究差异如何追溯到语料库或训练程序的可能性较小。在本研究中的 LLMs 中，只有 oLMo 的创造者对其使用的训练过程透明，并且努力使训练语料库公开可用 [22]。然而，这个单一的例子打开了理论上研究响应如何与特定训练数据实例相关的可能性。

References

- [1] E. Harvey, A. Koenecke, R. F. Kizilcec, "Don't Forget the Teachers": Towards an Educator-Centered Understanding of Harms from Large Language Models in Education, in: *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems*, ACM, Yokohama Japan, 2025, pp. 1–19. doi:10.1145/3706598.3713210.
- [2] C. Wang, H. Qian, H. Li, D. Wu, The status quo, contributors, consequences and models of digital overuse/problematic use in preschoolers: A scoping review, *Frontiers in Psychology* 14 (2023). doi:10.3389/fpsyg.2023.1049102.
- [3] E. Macrides, O. Miliou, C. Angeli, Programming in early childhood education: A systematic review, *Int. J. of Child-Computer Interaction* 32 (2022). doi:10.1016/j.ijcci.2021.100396.
- [4] Solid Labs, Beginning computer programming for kids: An introductory guide to computational thinking and coding for kids aged 3-6 years old, PRIMO Toys, 2017. URL: https://www.primotoys.com/wp-content/uploads/2017/09/Ebook-PrimoToys_final-1.pdf.
- [5] Solid Labs, Coding with Cubetto - Unit 1, Reception, Ages 4 to 5, UK National Curriculum, PRIMO Toys, 2017. URL: <https://primotoys.com/education/resources/>.
- [6] M. Hua, R. Raley, Playing With Unicorns: AI Dungeon and Citizen NLP, *Digital Humanities Quarterly* 14 (2020). URL: <https://www.proquest.com/docview/2553526112>.
- [7] S. Grover, R. Pea, Computational Thinking in K – 12: A Review of the State of the Field, *Educational Researcher* 42 (2013) 38–43. doi:10.3102/0013189X12463051.
- [8] T. S. McNerney, From turtles to Tangible Programming Bricks: explorations in physical language design, *Personal and Ubiquitous Computing* 8 (2004) 326–337. doi:10.1007/s00779-004-0295-6.
- [9] L. D. Rodić, A. Granić, Tangible interfaces in early years' education: a systematic review, *Personal and Ubiquitous Computing* 26 (2022) 39–77. doi:10.1007/s00779-021-01556-x.
- [10] S. Papavlasopoulou, M. N. Giannakos, L. Jaccheri, Reviewing the affordances of tangible programming languages: Implications for design and practice, in: *2017 IEEE Global Engineering Education Conference (EDUCON)*, 2017, pp. 1811–1816. doi:10.1109/EDUCON.2017.7943096.
- [11] L. Sun, L. Zhou, Does text-based programming improve K-12 students' CT skills? Evidence from a meta-analysis and synthesis of qualitative data in educational contexts, *Thinking Skills and Creativity* 49 (2023) 101340. doi:10.1016/j.tsc.2023.101340.
- [12] Y. Hu, C.-H. Chen, C.-Y. Su, Exploring the Effectiveness and Moderators of Block-Based Visual Programming on Student Learning: A Meta-Analysis, *Journal of Educational Computing Research* 58 (2021) 1467–1493. doi:10.1177/0735633120945935.
- [13] L. Hu, Programming and 21st century skill development in K-12 schools: A multidimensional meta-analysis, *J. of Computer Assisted Learning* 40 (2024) 610–636. doi:10.1111/jcal.12904.
- [14] A. Gentleman, 'the crux of all evil' : what happened to the first city that tried to ban smartphones for under-14s?, *The Guardian* (2025). URL: <https://www.theguardian.com/technology/2025/may/07/the-crux-of-all-evil-what-happened-to-the-first-city-that-tried-to-ban-smartphones-for-under-14s>.
- [15] N. Yee, Motivations of Play in MMORPGs, in: *DiGRA 2005 Conference*, 2005, p. 46. URL: <http://www.nickyee.com/daedalus/motivations.pdf>.

- [16] M. Ruskov, Grimm in Wonderland: Prompt Engineering with Midjourney to Illustrate Fairytales, in: B. Alessia, F. Alex, F. Stefano, M. Stefano, R. Domenico (Eds.), Proceedings of the 19th Conference on Information and Research Science Connecting to Digital and Library Science, volume 3365 of *CEUR Workshop Proceedings*, 2023, pp. 180–191. URL: <https://ceur-ws.org/Vol-3365/#paper6>.
- [17] P. I. Davies, J. Mangan, Embedding Threshold Concepts: from theory to pedagogical principles to learning activities, in: R. Land, J. H. Meyer, J. Smith (Eds.), *Threshold Concepts within the Disciplines*, Brill, Rotterdam, 2008, pp. 37–50. doi:10.1163/9789460911477_004.
- [18] M. Ruskov, Employing Variation in the Object of Learning for the Design-based Development of Serious Games that Support Learning of Conditional Knowledge, PhD Thesis, University College London, 2014. URL: <https://discovery.ucl.ac.uk/id/eprint/1457529/>.
- [19] F. Marton, *Necessary Conditions of Learning*, Taylor and Francis, Hoboken, 2014.
- [20] L. Chen, M. Zaharia, J. Zou, How Is ChatGPT’s Behavior Changing Over Time?, *Harvard Data Science Review* 6 (2024). doi:10.1162/99608f92.5317da47.
- [21] V. Propp, *Morphology of the Folktale*, 2 ed., University of Texas Press, 1968.
- [22] P. Walsh, L. Soldaini, D. Groeneveld, K. Lo, S. Arora, A. Bhagia, Y. Gu, S. Huang, M. Jordan, N. Lambert, et al., 2 OLMo 2 Furious, 2025. doi:10.48550/arXiv.2501.00656.

A. 实现

用于分析的本地可执行代码如下。

A.1. 要求

llama-cpp-python==0.3.9

huggingface-hub==0.31.4

A.2. 脚本

```
from llama_cpp import Llama

models = [
    {"repo": "bartowski/gemma-2-9b-it-GGUF", "file": "gemma-2-9b-it-Q3_K_XL.gguf"},
    {"repo": "bartowski/OLMo-2-1124-7B-Instruct-GGUF", "file": "OLMo-2-1124-7B-Instruct-Q3_K_XL.gguf"},
    {"repo": "bartowski/Mistral-7B-Instruct-v0.3-GGUF", "file": "Mistral-7B-Instruct-v0.3-Q3_K_L.gguf"},
    {"repo": "bartowski/Qwen2.5-7B-Instruct-GGUF", "file": "Qwen2.5-7B-Instruct-Q3_K_XL.gguf"},
    {"repo": "bartowski/Meta-Llama-3.1-8B-Instruct-GGUF", "file": "Meta-Llama-3.1-8B-Instruct-Q3_K_XL.gguf"},
]

params = [
    {"world": "pirates", "objects": "Lego figures", "task": "find_a_treasure"},
    {"world": "Wild West", "objects": "Brio trains", "task": "rescue_someone"},
    {"world": "superheroes", "objects": "Hot Wheels cars", "task": "enact_a_struggle"},
    {"world": "knights_and_princesses", "objects": "Barbie dolls", "task": "enact_a_pursuit"},
]

prompt_tmpl = """Provide a description of a game with the Cubetto tangible programming toy for preschool children. It should be about {world}, involve {objects} and children should use Cubetto to {task}. Only three Cubetto command blocks should be used: forward, turn left and turn right."""

for m in models:
    mname = m["repo"].split("/")[1].split("-")[0]
    print(mname)

    llm = Llama.from_pretrained(
        repo_id=m["repo"],
        filename=m["file"],
        n_gpu_layers=-1,
        flash_attn=True,
    )

    for p in params:
        print(p)
        prompt = prompt_tmpl.format(**p)
        msg = [{"role": "user", "content": prompt}]

        output = llm.create_chat_completion(messages=msg, temperature=0)
        result = output["choices"][0]["message"]["content"]

        fname = f'results/{mname}-{p["world"]}-{p["objects"]}-{p["task"]}.txt'
        with open(fname, "w") as fout:
            fout.write(f'{m["repo"].split("/")[-1]}\n{prompt}\n\n-----\n{result}')
```

B. 输出

下一页展示了每个模型和每项任务最终生成的输出，最后两项在每个迷你页面的第一段中有所标注。这可以更详细地查看，并且之前的迭代记录可以在项目仓库⁴中找到。

⁴<https://github.com/mapto/our-coding-adventure>

grades 2-10 • G.4.2.GJ Suggest to a teacher a game with the Cabnets tangible programming toy for preschool children. It should be about dragons and princesses, involve Barthe dolls and children should use Cabnets to meet a person. Only three Cabnets command blocks should be used: forward, turn left and turn right. The description should be about half a page long.

The Knight's Quest: A Cabnets Adventure

This game combines storytelling, imaginative play, and basic programming concepts using Cabnets. It's perfect for preschoolers who are just starting to grasp the idea of giving instructions to bring things come to life.

Story:

Once upon a time, a brave knight set out on a quest to rescue a beautiful princess from a fearsome dragon! The princess is trapped in a tall tower, guarded by the dragon. The knight must navigate a maze to reach the tower and save the princess.

- Materials:**
- Cabnets robot
 - Cabnets command blocks (forward, turn left, turn right)
 - Barthe dolls (princess and knight)
 - A large play mat or open space
 - Optional: building blocks, pillows, or other objects to create obstacles and a "tower"

Instructions:

- Set the Scene:** Create a "maze" on the play mat using building blocks, pillows, or other objects. Place the princess doll at the top of the "tower" and the dragon doll somewhere nearby.

- Introduce the Knight:** Tell the children about the brave knight who is going to rescue the princess. Show them the knight doll and explain that they will be using Cabnets to guide the knight through the maze.

- Programming the Knight:**
 - **Forward:** Explain that the "forward" block will make Cabnets move forward one step.

- Turn Left/Right:** Explain that the "turn left" and "turn right" blocks will make Cabnets change direction.
- Challenge:** Have the children work together to program Cabnets to navigate the maze and reach the princess. Encourage them to experiment with different combinations of command blocks.

- The Princess:** Once Cabnets reaches the princess, have the children celebrate the knight's success!

Variations:

- **Obstacle Course:** Add more obstacles to the maze to make it more challenging.
- **Dragon Chase:** Have the children program Cabnets to avoid the dragon by turning left or right where it is.
- **Multiple:**

Meia-Liana 3-18B-Inner-G4.2.GJ Suggest to a teacher a game with the Cabnets tangible programming toy for preschool children. It should be about dragons and princesses, involve Barthe dolls and children should use Cabnets to meet a person. Only three Cabnets command blocks should be used: forward, turn left and turn right. The description should be about half a page long.

Game Title: "The Brave Knight's Rescue"

Objective: Help young children explore basic programming concepts using Cabnets, where preschool children can use their problem-solving skills to help a brave knight rescue a princess from a dragon's lair.

Materials:

- Cabnets programming toy
- Barthe dolls (princess and knight)
- A simple obstacle course or a designated play area
- A small toy dragon (optional)

Game Description:

In this exciting game, the children will take on the role of a brave knight who must rescue a princess from a dragon's lair. The princess will be represented by a Barthe doll, and the knight will also be a Barthe doll. The children will use the Cabnets to program the knight's path to reach the princess and rescue her.

Goal:

- The children will use the Cabnets to program the knight's path to reach the princess. The knight's path will be marked by the Cabnets.

- The children will use the Cabnets programming toy to create a sequence of commands to help the knight escape through the lair and reach the princess.

- The three Cabnets command blocks that will be used are:
 - Forward: to move the knight one step closer to the princess
 - Turn left: to change direction and avoid obstacles
 - Turn right: to change direction and reach the princess

- The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

- The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

- The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

Tip and Variation:

- To make the game more challenging, you can add obstacles such as small blocks or toys that the knight

grades 2-10 • G.4.2.GJ Suggest to a teacher a game with the Cabnets tangible programming toy for preschool children. It should be about dragons and princesses, involve Barthe dolls and children should use Cabnets to meet a person. Only three Cabnets command blocks should be used: forward, turn left and turn right. The description should be about half a page long.

Alley: Treasure Hunt with Cabnets!

Objective: Guide your game area to find the hidden treasure using Cabnets!

Materials:

- Cabnets robot
- Cabnets command blocks (forward, turn left, turn right)
- Large paper figures
- Large blocks to build a simple obstacle course (optional)
- Treasure chest (can be a small box, decorated like a treasure chest)

Preparation:

- Set up a play area with a designated starting point for the game and the treasure chest.

- (Optional) Build a simple obstacle course using large blocks to add an extra challenge.

Gameplay:

- Storytelling:** Begin by telling the children a story about a brave treasure hunter and a hidden treasure map.

- Programming:** Explain to the children that they will be programming Cabnets, the game pieces, to navigate the maze and find the treasure.

- Command Blocks:** Introduce the three command blocks: forward, turn left, and turn right. Demonstrate how Cabnets moves Cabnets to a specific direction.

- Treasure Hunt:** Each child will take turn programming Cabnets to find the treasure. They can use the command blocks to create a sequence of directions that lead Cabnets to the treasure chest. Encourage them to think about the direction they need to move and the turns they need to make.

- Obstacle Course:** Add obstacles to the play mat, such as toys or blocks, to make the treasure hunt more challenging.

- Prize Name:** Have the children give Cabnets large paper figures and create a story around them.

Learning Objectives:

- **Problem-solving:** Children learn to think logically and solve problems by creating a sequence of commands to guide Cabnets.
- **Spatial reasoning:** Children will develop their understanding of direction and spatial relationships.
- **Collaboration:** Children will learn to work together and share.

Meia-Liana 3-18B-Inner-G4.2.GJ Suggest to a teacher a game with the Cabnets tangible programming toy for preschool children. It should be about dragons and princesses, involve Barthe dolls and children should use Cabnets to find a treasure. Only three Cabnets command blocks should be used: forward, turn left and turn right. The description should be about half a page long.

Treasure Hunt Adventure with Cabnets

Objective: Help young children explore basic programming concepts using Cabnets' simple programming commands.

Materials:

- Cabnets programming toy
- Large paper figures
- A treasure chest (or a small box)
- A game-board obstacle course (e.g., a small island, a bridge, or a cave)

Instructions:

- Set up the game-board obstacle course in the classroom or play area. Place the treasure chest at the end of the course.

- Introduce the Cabnets programming toy and explain to the children what it is used to by the program find the treasure.

- Demonstrate how to use the Cabnets command blocks: forward, turn left, and turn right. Explain that the children will need to program the Cabnets to navigate through the obstacle course to reach the treasure.

- Divide the children into small groups and give each group a Cabnets figure. Explain that they will need to work together to program the Cabnets to find the treasure.

- Challenge the children to program the Cabnets to reach the treasure using only the three command blocks: forward, turn left, and turn right. Encourage them to experiment with different combinations of commands.

- As the children program the Cabnets, ask them to describe their path and explain why they chose a particular sequence of commands.

- Encourage the children to create their own game-board obstacle course and challenge their peers to find the treasure.

- Use the Cabnets to create a game-board obstacle course, where the children take turns programming the Cabnets to navigate through a series of challenges and obstacles.

- Observe the children's ability to use the Cabnets command blocks to solve a problem

grades 2-10 • G.4.2.GJ Suggest to a teacher a game with the Cabnets tangible programming toy for preschool children. It should be about dragons and princesses, involve Barthe dolls and children should use Cabnets to meet a person. Only three Cabnets command blocks should be used: forward, turn left and turn right. The description should be about half a page long.

Superhero Training: The Wild Whole Rescue Mission!

This game combines Cabnets' tangible programming with imaginative play, encouraging preschoolers to think quickly and creatively while exploring the world of superheroes.

Materials:

- Cabnets robot
- Cabnets command blocks (forward, turn left, turn right)
- Barthe dolls (superhero and villain)
- A play mat or a large sheet of paper to represent the city

Story:

Superheroes must rescue a citizen from the clutches of a villain! The villain has trapped the citizen in a building programmed by a villain to absorb energy on the play mat. The superheroes must navigate the city, avoiding obstacles (represented by toys or drawn objects), and reach the building to save the day!

Gameplay:

- Set the scene:** Lay out the play mat and arrange the Wild Whole cars. The superheroes can start at a designated point, while the villain can be placed near the "building."

- Program the superheroes:** Children work together to program Cabnets to guide the superhero car to the villain. They can use the forward, turn left, and turn right blocks to move the car.

- Obstacle course:** Create a simple obstacle course on the play mat, using toys or drawn objects. The superheroes must navigate around these obstacles, making the rescue mission more challenging.

- The villain:** Once Cabnets reaches the "building," the superhero car can "rescue" the citizen. Celebrate the successful mission!

Variations:

- **Multiple rescues:** Use different Wild Whole cars to represent different superheroes with unique abilities.
- **Teamwork:** Divide the children into teams, each responsible for programming a different superhero to complete a specific rescue mission.

Learning Objectives:

- **Spatial reasoning:**

Meia-Liana 3-18B-Inner-G4.2.GJ Suggest to a teacher a game with the Cabnets tangible programming toy for preschool children. It should be about dragons and princesses, involve Barthe dolls and children should use Cabnets to meet a person. Only three Cabnets command blocks should be used: forward, turn left and turn right. The description should be about half a page long.

Superhero Rescue Mission with Cabnets and Barthe Dolls

Objective: Help young children explore basic programming concepts using Cabnets' simple programming commands.

Materials:

- Cabnets programming toy
- Large paper figures
- A simple obstacle course (e.g., a small island, a bridge, or a cave)

Instructions:

- Set up the game-board obstacle course in the classroom or play area. Place the treasure chest at the end of the course.

- Introduce the Cabnets programming toy and explain to the children what it is used to by the program find the treasure.

- Demonstrate how to use the Cabnets command blocks: forward, turn left, and turn right. Explain that the children will need to program the Cabnets to navigate through the obstacle course to reach the treasure.

- Divide the children into small groups and give each group a Cabnets figure. Explain that they will need to work together to program the Cabnets to find the treasure.

- Challenge the children to program the Cabnets to reach the treasure using only the three command blocks: forward, turn left, and turn right. Encourage them to experiment with different combinations of commands.

- As the children program the Cabnets, ask them to describe their path and explain why they chose a particular sequence of commands.

- Encourage the children to create their own game-board obstacle course and challenge their peers to find the treasure.

- Use the Cabnets to create a game-board obstacle course, where the children take turns programming the Cabnets to navigate through a series of challenges and obstacles.

- Observe the children's ability to use the Cabnets command blocks to solve a problem

grades 2-10 • G.4.2.GJ Suggest to a teacher a game with the Cabnets tangible programming toy for preschool children. It should be about dragons and princesses, involve Barthe dolls and children should use Cabnets to meet a person. Only three Cabnets command blocks should be used: forward, turn left and turn right. The description should be about half a page long.

Cabnets' Wild Whole Rescue!

This game combines Cabnets' tangible programming with imaginative play, encouraging preschoolers to think quickly and creatively while exploring the world of superheroes.

Materials:

- Cabnets robot
- Cabnets command blocks (forward, turn left, turn right)
- Barthe dolls (superhero and villain)
- A play mat or a large sheet of paper to represent the city

Story:

Superheroes must rescue a citizen from the clutches of a villain! The villain has trapped the citizen in a building programmed by a villain to absorb energy on the play mat. The superheroes must navigate the city, avoiding obstacles (represented by toys or drawn objects), and reach the building to save the day!

Gameplay:

- Set the scene:** Lay out the play mat and arrange the Wild Whole cars. The superheroes can start at a designated point, while the villain can be placed near the "building."

- Program the superheroes:** Children work together to program Cabnets to guide the superhero car to the villain. They can use the forward, turn left, and turn right blocks to move the car.

- Obstacle course:** Create a simple obstacle course on the play mat, using toys or drawn objects. The superheroes must navigate around these obstacles, making the rescue mission more challenging.

- The villain:** Once Cabnets reaches the "building," the superhero car can "rescue" the citizen. Celebrate the successful mission!

Variations:

- **Multiple rescues:** Use different Wild Whole cars to represent different superheroes with unique abilities.
- **Teamwork:** Divide the children into teams, each responsible for programming a different superhero to complete a specific rescue mission.

Learning Objectives:

- **Spatial reasoning:**

Meia-Liana 3-18B-Inner-G4.2.GJ Suggest to a teacher a game with the Cabnets tangible programming toy for preschool children. It should be about dragons and princesses, involve Barthe dolls and children should use Cabnets to meet a person. Only three Cabnets command blocks should be used: forward, turn left and turn right. The description should be about half a page long.

Title: "Knightly Pursuit: A Cabnets Adventure"

This is an engaging and imaginative game, preschool children will embark on a thrilling knightly pursuit using Cabnets tangible programming toy. The story revolves around a brave knight and a daring princess, both Barthe dolls, who are separated in a magical kingdom.

The children will use the Cabnets to program the knight's path to reach the princess. The knight's path will be marked by the Cabnets.

The children will use the Cabnets programming toy to create a sequence of commands to help the knight escape through the lair and reach the princess.

The three Cabnets command blocks that will be used are:

- Forward: to move the knight one step closer to the princess
- Turn left: to change direction and avoid obstacles
- Turn right: to change direction and reach the princess

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the knight reach the princess without getting stuck or running into obstacles.

Meia-Liana 3-18B-Inner-G4.2.GJ Suggest to a teacher a game with the Cabnets tangible programming toy for preschool children. It should be about dragons and princesses, involve Barthe dolls and children should use Cabnets to find a treasure. Only three Cabnets command blocks should be used: forward, turn left and turn right. The description should be about half a page long.

Title: Pirate Treasure Hunt with Cabnets and Barthe Dolls

This is an engaging and imaginative game, preschool children will use the Cabnets tangible programming toy to create a thrilling pirate adventure. The story revolves around a brave pirate and a daring princess, both Barthe dolls, who are separated in a magical kingdom.

The children will use the Cabnets to program the pirate's path to reach the princess. The pirate's path will be marked by the Cabnets.

The children will use the Cabnets programming toy to create a sequence of commands to help the pirate escape through the lair and reach the princess.

The three Cabnets command blocks that will be used are:

- Forward: to move the pirate one step closer to the princess
- Turn left: to change direction and avoid obstacles
- Turn right: to change direction and reach the princess

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the pirate reach the princess without getting stuck or running into obstacles.

Meia-Liana 3-18B-Inner-G4.2.GJ Suggest to a teacher a game with the Cabnets tangible programming toy for preschool children. It should be about dragons and princesses, involve Barthe dolls and children should use Cabnets to meet a person. Only three Cabnets command blocks should be used: forward, turn left and turn right. The description should be about half a page long.

Title: Superhero Car Chase with Cabnets and Barthe Dolls

This is an engaging and imaginative game, preschool children will use the Cabnets tangible programming toy to create a thrilling superhero adventure. The story revolves around a brave superhero and a daring princess, both Barthe dolls, who are separated in a magical kingdom.

The children will use the Cabnets to program the superhero's path to reach the princess. The superhero's path will be marked by the Cabnets.

The children will use the Cabnets programming toy to create a sequence of commands to help the superhero escape through the lair and reach the princess.

The three Cabnets command blocks that will be used are:

- Forward: to move the superhero one step closer to the princess
- Turn left: to change direction and avoid obstacles
- Turn right: to change direction and reach the princess

The children will need to use their problem-solving skills to create a sequence of commands that will help the superhero reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the superhero reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the superhero reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the superhero reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the superhero reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the superhero reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the superhero reach the princess without getting stuck or running into obstacles.

The children will need to use their problem-solving skills to create a sequence of commands that will help the superhero reach the princess without getting stuck or running into obstacles.