



CODING EXPRESS

Teacher Guide Introduction

Who is the material for?

The Coding Express Teacher Guide is designed to help preschool teachers develop children's understanding of cause and effect relationships, and early coding concepts, such as sequencing, looping, and conditional statements. Using these lessons, you'll support the children's learning, helping them to practice early coding skills, like problem-solving, computational thinking, and using digital tools to design and express ideas. At the same time, they'll be developing early literacy and language skills.

What is it for?

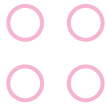
Designed for preschoolers, the Coding Express Set uses a relevant theme that naturally incorporates early coding skills. Working with the set, children will intuitively use computational thinking to develop designs and express ideas as they build a train and tracks, and position action bricks to affect the train's behavior.

The Coding Express Teacher Guide provides fun and engaging opportunities for exploring early coding-related concepts. Using the Teacher Guide, you can facilitate engaging early coding lessons in which children think like digital age learners as they build train tracks of various shapes. Most importantly, the physical and digital lessons will help children to become problem-solvers by enhancing their creativity, collaboration, and communication skills.



Watch Video





What is it?

The Coding Express includes 234 bricks and the following support materials.

1. A “Getting Started” activity card

Use these five quick steps to introduce children to the unique elements of the set, including the train engine, train tracks, and action bricks.

2. An Introduction Guide

A complete overview of the Coding Express solution, the app, the building cards, how to start the train engine, and where to download the Teacher Guide.

3. A Coding Express poster

An overview of the action brick's behaviors and inspiration for different ways of setting up the train tracks.

4. Six Building Cards

These two-sided cards show a variety of inspiration models; the green-sided cards show simple models and the blue-sided cards show more challenging models.

Additionally, the Coding Express App is available to download free of charge from the App Store and Google Play.

How are the learning objectives achieved?

In each lesson, strategic questions guide the children through the process of applying early coding concepts and skills, while the LEGO® DUPLO® building activities reinforce creativity, inquiry, and exploration.

The Coding Express Teacher Guide includes four lessons to be used with the physical set and four app-based lessons.

- The physical lessons are designed to help children understand the key concepts of early coding: sequencing, looping, and conditional statements (if...then...)
- In the app-based lessons, children apply the knowledge they've gained from the physical lessons and practice these skills in a more engaging way, specifically targeting the learning areas of music, character, journey, and math.





The table of contents gives a brief description of the topics covered in each lesson. The lessons are labeled as *beginner*, *intermediate*, or *advanced*, based on the skills and knowledge necessary to complete them. Feel free to select and adapt the lessons according to what's most relevant and appropriate for your preschoolers. The mini videos in each lesson give a good overview of each lesson and should help you to easily prepare and facilitate the lessons.



Watch Video

Lesson Structure

Each lesson is structured according to a natural learning flow, which promotes successful learning outcomes. The Engage, Explore, and Explain phases, which are the first three phases of each lesson, can be done in one session. The Elaborate phase is more challenging and can be completed during a later session. The Evaluate phase summarizes the specific learning skills covered in each lesson.

Engage

During the Engage phase, physical games, short stories, and discussions will spark children's curiosity and activate their existing knowledge while preparing them for a new learning experience.

Explore

In this phase, the children will participate in a hands-on building activity. As their hands create models of people, places, objects, and ideas, their minds will organize and store new information related to these structures.

Explain

During the Explain phase, children will have the opportunity to reflect on what they have done, and to talk about and share insights they have gained during the Explore phase of the lesson.

Elaborate

New challenges in this phase build upon the concepts children learned previously in the lesson. These extension activities enable children to apply their newly-acquired knowledge, reinforcing what they've learned.





Evaluate

The Coding Express lessons have been developed based on the science, math, and technology guidelines from the National Association for the Education of Young Children (NAEYC), Head Start, and the 21st Century Early Year Learning skills (P21).

The learning grid and the 21st century learning skills framework give an overview of the learning values that are mentioned throughout this Teacher Guide. The learning goals listed at the end of each lesson can be used to determine whether each child is developing the relevant skills. These bullet points target specific skills or pieces of information that are practiced or presented during each lesson.





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GETTING STARTED

CODING EXPRESS

45025 AGES 2-5 FOR 3-6 CHILDREN

This Getting Started activity card will help you introduce the Coding Express set to your preschoolers. The activities are designed to familiarize children with the unique elements of the set, which include a train engine and action bricks. After completing some or all of these activities, you can download the Teacher Guide for more in-depth activities related to early coding skills.



LEARNING OBJECTIVES

Early Technology & Science

- Exploring and using simple technology
- Understanding cause and effect
- Making predictions and observations
- Developing computational thinking
- Developing spatial thinking

Download the teacher guide:
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Five steps to a great start:

- 1 Demonstrate how to lay the track pieces. Let the children discover the different shapes the tracks can make. Encourage them to experiment with the track switches and red rail stoppers. Have them build a track with three or four different end points.
- 2 Choo-choo! Introduce the train engine. Demonstrate how to start and stop the engine, then have each child take a turn starting and stopping it. Show them how to move the engine from one end of the track to the other so that everyone can have a turn.
- 3 Show the children how to position the action bricks along the train track. Ask them to lay one of the action bricks on the track and then start the engine. Have them describe



TEACHER TIPS

- The building cards provide inspiration to help the children build their models.
 Green cards – less challenging models.
 Blue cards – more challenging models.
- They can also design and build their own unique models.

what they observe when the engine goes over the action bricks. Repeat this for all of the action bricks and then let the children experiment with the bricks in free play.

- 4 Show the children the building cards one at a time and ask them to describe what they see. Ask whether they have been to any of the places shown on the cards and to recount their experiences. Have the children work together to build at least three of the places shown on the building cards.
- 5 Now put all of the pieces together! Ask the children to place their models along the track. Encourage them to use the engine and the action bricks to transport figures to and from the different destinations along the track.



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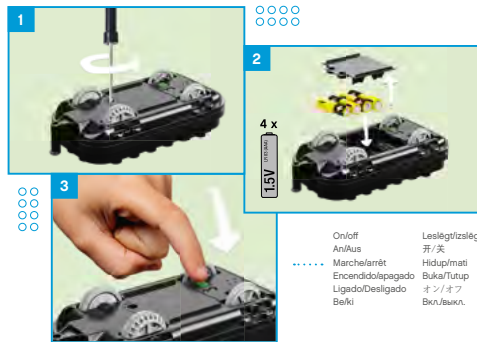


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CODING EXPRESS	INTRODUCTION GUIDE
DIGI-ZUG	EINFÜHRUNG
L'EXPRESS DU CODAGE	GUIDA D'INTRODUCCION
L'EXPRESS DA PROGRAMACÃO	GUIDA INTRODUTIVA
PROGRAM EXPRESSZ	GUÍA DE INTRODUCCIÓN
ÁTRÁ PROGRAMMÉSANA	GUIA INTRODUTÓRIO
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○○○○

Motor
Moteur
Motors
马达
Мотор



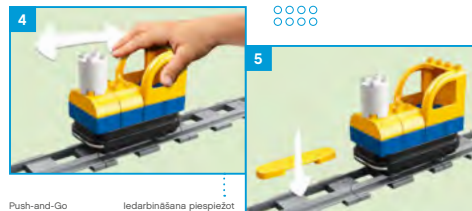
Speaker
Lautsprecher
Haut-parleur
Altoparlante
Altavoz
Coluna

Hangszóró
Skjalrunis
揚声器
Pembesar Suara
スピーカー
Динамик

Colour Sensor
Color Sensor
Farbsensor
Capteur de couleurs
Sensore di colore
Sensor de color
Sensor de Cor
Színérzékelő
Krásu sensors
颜色传感器
Sensor Warna
カラーセンサー
Датчик цвета

Light
Licht
Lumière
Luce
Luz

Galam
発光
Lampu
ライト
Освещение
Fényjelzés



Push-and-Go
Push-And-Go
Pousser pour démarrer
Push-and-Go
Empurrar e Avançar
Told-és-indul

○○○○

Stop
Anhalten
Arrêt
Parada
Pisar
Aptáslánás
停止
Behéni
停止する
Остановка

Change direction
Ändern der Fahrtrichtung
Changement de direction
Cambia direzione
Cambio de sentido
Mudar a direção
Irányváltás
Kusribae vizenaa maipaa
Ubah arah
Изменение направления движения

Refuel
Auftanken
Plein
Carburant
Rifornimento
Repostaje
Reabastecer
Üzemanyag feltöltés
Degviesas uzplade
Isi ulang
Isi Semula
Заправка

Light on/off
Licht ein/aus
Lumière allumée/éteinte
Luce accesa/spenta
Luz
Luz ligar/desligar
Világítás kübe
Gaismu iseligšana/izsigšana
灯开关/次
Lampu hidup/mati
Bunyi
Включение/выключение света

Sound
Geräusche
Son
Suono
Sonido
Som
Hang
Sikana
Suara
Bunyi
Сигнал

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Less challenging
Weniger anspruchsvoll
Moins difficile
Meno impegnativo
Més sencillo
Menor desafío
Könnyebb feladat
Zemla sarežģības pakāpe
低难度
Менее сложные



More challenging
Anspruchsvoller
Plus difficile
Più impegnativo
Més complicado
Maior desafio
Nehézebb feladat
Augsta sarežģības pakāpe
高难度
Более сложные

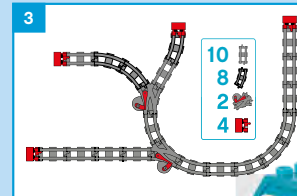
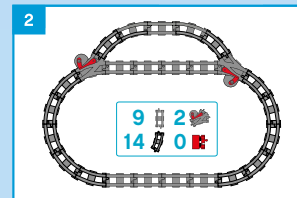
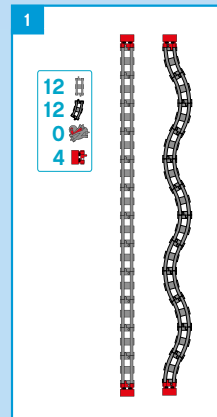
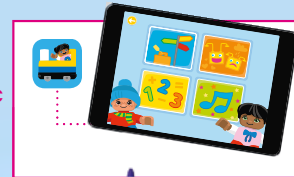


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Matériel didactique
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