

# Red Light, Purple Light

Intervention Brief | *Preparing Young Children for School*

WHAT WORKS CLEARINGHOUSE™  
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U.S. DEPARTMENT OF EDUCATION

Developing self-regulation at an early age is important for children’s success in school and in life.<sup>1</sup> Self-regulation involves the ability to remember instructions, shift attention from one thing to another, and reduce the intensity and frequency of impulsive emotions and behaviors. *Red Light, Purple Light* is a preschool program that includes music and movement games aimed at fostering self-regulation skills in young children.

**Goal:** *Red Light, Purple Light* aims to support children in remembering instructions, switching their attention from one rule to another, and inhibiting impulsive behaviors and emotions.

The What Works Clearinghouse (WWC) reviews existing research on educational interventions to identify evidence-based programs and practices. This WWC intervention report summarizes the available evidence on the effects of *Red Light, Purple Light* on student outcomes.





## Did *Red Light, Purple Light* improve student outcomes?

Two studies of *Red Light, Purple Light* conducted in Head Start centers meet WWC standards. Findings from these studies are summarized in Table 1. The table includes rows for each outcome domain—a group of related outcome measures—that was studied in the research. Effects of the program on other student outcomes are unknown.

The WWC effectiveness rating indicates whether *Red Light, Purple Light* resulted in improved outcomes for children assigned to receive the program compared with children who were not.

The table also indicates whether the evidence reviewed satisfies the Departments of Education’s requirements for strong, moderate, or promising tiers of evidence at the time this report was written. More information about these ratings and requirements is provided on the next page. The findings and conclusions could change as new research becomes available.

**Table 1. Summary of findings on *Red Light, Purple Light* from two studies that meet WWC standards**

Outcome domain	Effectiveness rating	Sample size	Evidence tier	Summary
Self-Regulation	Potentially positive	433		The research provides moderate evidence that <i>Red Light, Purple Light</i> improved student self-regulation. This assessment is based on two studies that meet WWC standards.
Mathematics	Uncertain	433		The research does not support claims that <i>Red Light, Purple Light</i> improved student mathematics achievement. This assessment is based on two studies that meet WWC standards.
Reading & Literacy Related	Uncertain	433		The research does not support claims that <i>Red Light, Purple Light</i> improved student reading and literacy related achievement. This assessment is based on two studies that meet WWC standards.
Language	Uncertain	276		The research does not support claims that <i>Red Light, Purple Light</i> improved student language. This assessment is based on one study that meets WWC standards.

### FINDINGS FROM TWO STUDIES

433 children in Head Start centers in the Pacific Northwest region.

### CHILDREN IN PRESCHOOL

**Race:**  
White: 26%, Black: 6%, Native Hawaiian or Other Pacific Islander: 7%, Other/unknown: 61%  
**Ethnicity:** 58% Hispanic/Latino

**English Language Learners:** 33%  
**Gender:** 51% Female  
**Families with incomes below the poverty guidelines:** 100%




## HOW THE WWC REVIEWS AND DESCRIBES EVIDENCE

The WWC conducted a systematic review of interventions designed to improve children’s level of preparation for school and selected and prioritized studies for review using the version 4.1 [Review Protocol for Preparing Young Children for School](#). The WWC evaluated the quality and results of the selected studies using the criteria outlined in the version 4.1 [Procedures and Standards Handbooks](#) and the accompanying [Review Protocol for Preparing Young Children for School](#).

The WWC considers each study’s research design, whether findings were statistically significant and positive, and the number of studies contributing to this report. The WWC synthesizes evidence across studies—using a weighted average—to determine the effectiveness rating for each outcome domain. The WWC defines outcome domains in the [Review Protocol for Preparing Young Children for School](#) to group related outcome measures.

Effectiveness rating	Description of the evidence
Positive (or negative) effects	The evidence base primarily includes the strongest research designs, and the average effect across all high-quality research is statistically significant and positive (or negative).
Potentially positive (or negative) effects	The evidence base primarily includes research with some limitations, and the average effect across all high-quality research is statistically significant and positive (or negative).
Uncertain effects	The average effect across all high-quality research is not statistically significant, so the WWC does not classify it as a positive or a negative effect.

The WWC considers the effectiveness rating, the sample size, and the number of educational sites (states, districts, local education agencies, schools, postsecondary campuses) across studies to determine the evidence tier for each outcome domain. When the effectiveness rating is *uncertain*, *potentially negative*, or *negative effects*, there is no evidence tier.

Evidence tier	Criteria based on evidence synthesis
Strong evidence of effectiveness	 <ul style="list-style-type: none"> <li>• Receives an effectiveness rating of positive effects, and</li> <li>• Includes at least 350 students in at least two educational sites</li> </ul>
Moderate evidence of effectiveness	 <ul style="list-style-type: none"> <li>• Receives an effectiveness rating of potentially positive effects, and</li> <li>• Includes at least 350 students in at least two educational sites</li> </ul>
Promising evidence of effectiveness	 <ul style="list-style-type: none"> <li>• Receives an effectiveness rating of potentially positive effects or positive effects</li> <li>• Includes fewer than 350 students or two educational sites</li> </ul>

## How was *Red Light, Purple Light* implemented?

This section provides details of how Head Start centers implemented *Red Light, Purple Light* in the two studies that contribute to this intervention report. This information can help educators identify the requirements for implementing *Red Light, Purple Light* and determine whether implementing this program would be feasible in their districts, schools, or early childhood education centers.

Teachers implementing the *Red Light, Purple Light* sessions received a 3-hour in-person training and a kit of materials provided by the developer. Teachers implemented the *Red Light, Purple Light* sessions for approximately 20 minutes during circle time. The *Red Light, Purple Light* sessions took place twice a week for 8 weeks. Table 2 describes the components and implementation of *Red Light, Purple Light* in more detail.

WWC standards assess the quality of the research, not the quality of the implementation. Studies that meet WWC standards vary in quality of implementation. However, a study must describe the relevant components of the program and how each was implemented with adequate detail to be included in an intervention report.

**Comparison condition:** In the two studies that contribute to this intervention report, children in the comparison group were taught by teachers who did not participate in *Red Light, Purple Light* training and who did not implement the *Red Light, Purple Light* sessions. Teachers may have participated in other training or professional development programs offered by their district, school, or early childhood education center.

**Table 2. Implementation of components of *Red Light, Purple Light***

<b>Component</b>	<b>Description of the component</b>	<b>How it was implemented</b>
<b>Greeting Song</b>	The greeting song is a consistent opening to the session that allows children to prepare themselves for the upcoming game.	The teachers in both studies led the children in a welcome song and encouraged the children to participate by holding hands, clapping to the beat of the song, or performing simple dance moves.
<b>Music and Movement Games</b>	The five music and movement games are variations of the game <i>Red Light, Green Light</i> often played in schools.	The teachers in both studies told children which action to do in response to a visual or oral cue. As the games progressed, the teacher increased the complexity of the game by asking children to perform the action for the opposite cue or by adding more cues and actions. For example, the teachers began by asking children to walk when a green circle was shown and stop walking when a red circle was shown. Later, the teacher asked the children to stop when the green circle was shown and walk when the red circle was shown. Alternatively, the teacher asked the children to clap when a blue circle was shown and stomp their feet when an orange circle was shown. Children were also given an opportunity to present the cues and actions. The games were conducted during circle time.
<b>Goodbye Song</b>	The goodbye song is a consistent closing activity. It provides time for the group to sing a song saying goodbye and end the session.	The teachers led children in a goodbye song to close the session and encouraged the children to participate by holding hands, clapping to the beat of the song, or performing simple dance moves.

Note: The descriptive information for this program comes from the program website <https://health.oregonstate.edu/labs/kreadiness/intervention>, the two studies that meet WWC standards, and from correspondence with the developer. The WWC requests that developers review the program description sections for accuracy from their perspective. The WWC provided the developer with the program description in April 2022, and the WWC incorporated feedback from the developer.

## How much does *Red Light, Purple Light* cost?

This section provides educators with an overview of the resources needed to implement *Red Light, Purple Light*. Table 3 describes the major resources needed for implementation and approximate costs, based on information available as of April 2022.

**Table 3. Resources needed to implement *Red Light, Purple Light***

Resource	Description	Funding source
<b>Training</b>	According to the developer, teachers need a half-day (3-hour) training in person. The in-person training starts at \$1,000 for up to 30 individuals within 60 miles of Oregon State University or \$260 per person for asynchronous virtual training.	The developer provided the in-person training to the program teachers in the studies. The studies did not describe how the schools purchased the training.
<b>Training Manual</b>	According to the developer, teachers need the printed training manual (\$30 per manual) for the in-person training or the downloadable PDF of the training manual (\$25 per manual) for the online training.	The developer provided the training manuals to the program teachers in the studies. The cost was included in the price of the training.
<b>Materials</b>	The developer provides a list of materials necessary for implementing the program. If teachers do not have the materials available at their centers, they can purchase one of three kits of materials. The base kit includes a training manual, laminated circles, 24 egg shakers, a baton, a train whistle, and a USB with music files. The larger two kits also include a drum or a drum and the related text <i>Stop, Think, Act</i> by the developers McClelland and Tominey. The cost ranges from \$75–\$150 per kit.	The developer provided the material kits to the program teachers in the studies.

### For More Information:

#### About *Red Light, Purple Light*

349 Hallie E. Ford Center for Healthy Children & Families  
2631 SW Campus Way  
Oregon State University  
Corvallis, Oregon 97331

#### *The Kindergarten Readiness Study*

Email: [kreadiness@oregonstate.edu](mailto:kreadiness@oregonstate.edu) Web: <https://health.oregonstate.edu/labs/kreadiness/intervention>. Phone: (541) 737-1474

#### About the cost of the intervention

Web: <https://health.oregonstate.edu/labs/kreadiness/intervention>

## LEARN MORE



Read the full [intervention report](#) to learn more about *Red Light, Purple Light*, how it was implemented in the studies that meet standards, and what the studies found. Visit the WWC website for a [summary of evidence](#) on the effects of *Red Light, Purple Light*.

<sup>1</sup> Dodge, K. A., Bai, Y., Ladd, H. F., & Muschkin, C. G. (2017). Impact of North Carolina's early childhood programs and policies on educational outcomes in elementary school. *Child Development*, 88(3), 996-1014. <https://eric.ed.gov/?id=EJ1140481>; Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., Pagani, L. S., Feinstein, L., Engel, M., Brooks-Gunn, J., Sexton, H., Duckworth, K., & Japel, C. (2007). School readiness and later achievement. *Developmental Psychology*, 43(6), 1428-1446. <https://eric.ed.gov/?id=EJ779938>; Phillips, D., Lipsey, M., Dodge, K. A., Haskins, R., Bassok, D., Burchinal, M. R., & Weiland, C. (2017). *Puzzling it out: The current state of scientific knowledge on pre-kindergarten effects*. Brookings Institution. [https://www.brookings.edu/wp-content/uploads/2017/04/consensus-statement\\_final.pdf](https://www.brookings.edu/wp-content/uploads/2017/04/consensus-statement_final.pdf); Vandell, D. L., Burchinal, M., & Pierce, K. M. (2016). Early childcare and adolescent functioning at the end of high school: Results from the NICHD Study of Early Child Care and Youth Development. *Developmental Psychology*, 52(10), 1634-1645. <https://eric.ed.gov/?id=EJ1116022>; Yoshikawa, H., Weiland, C., & Brooks-Gunn, J. (2016). When does preschool matter? *The Future of Children*, 26(2), 21-35. <https://eric.ed.gov/?id=EJ1118535>.